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ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENFORCEMENT
NATIONAL ENFORCEMENT INVESTIGATIONS CENTER
BUILDING 53, BOX 25227, DENVER FEDERAL CENTER
DENVER, COLORADO 80225

TO : James Moore, Esq.
Regional Counsel, Region X
Alexandra B. Smith
Director, Air and Hazardous Materials Division, Region X

DATE: October 31, 1983

FROM : Carroll G. Wills, Esq.
Chief, Enforcement Specialist Office

PRIVILEGED
PREPARED FOR LITIGATION

SUBJECT:

Hazardous Waste Site Investigation, Western Processing Company, Inc.
Kent, Washington

Attached is a copy of the analytical results for an additional group of twenty drum samples collected by NEIC from Western Processing Company, Inc. as requested by Alexandra Smith. This analysis completes the analytical work that we had planned for the Western Processing samples.

We appreciate the opportunity to work with Region X on this project. If you have any questions, or if we can be of any further assistance, please contact me (FTS 234-2158) or Donald Gipe (FTS 234-4658).

cc:Thomas P. Gallagher, Director, NEIC (w/o attach)
Robert Harp, Assistant Director, Operations, NEIC (w/o attach)
Charles Rice, Air and Hazardous Materials Division, Region X
(w/attach)

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TO : Donald Gipe, Chief
Technical Analysis Branch

DATE: October 18, 1983

FROM : J.H. Lowry, Chief
Inorganic Analytical Section

SUBJECT: Analysis Results for the Second Group of Twenty Drum Samples from Western Processing Inc., Kent, Washington - Project A15.

SUMMARY

The major findings of our testing are:

1. Fourteen of the twenty drum samples were found to have characteristics of RCRA Hazardous Wastes. Ten of the drum samples were found to have flashpoints characteristic of RCRA Ignitability Hazardous Wastes. Five of the drum samples were characterized in the laboratory as RCRA EP Toxicity Hazardous Wastes. Three of the drum samples contained cyanide and/or sulfide which may characterize them as RCRA Reactivity Hazardous Wastes.

2. One drum sample that was characterized as a RCRA Hazardous Waste also contained about 66 mg/kg Aroclor 1254.

3. A large variability was observed in the minor and trace contents of replicate samples taken from the same drum. The impact of this variability is that at a 95% confidence interval only four drums may actually be EP Toxicity Hazardous Wastes, the cyanide and sulfide values reported may be about 200% higher than what is actually in the drums and the Aroclor 1254 may not be over 50 mg/kg.

4. The compound 3-(2-hydroxypropyl)-5-methyl-2-oxazolidinone was a major component of three of the samples. All three samples also characterized as RCRA Hazardous Wastes. The presence of this compound may indicate a common source. A number of samples from the first set of samples also contained this compound.

5. Four drum samples contained in common acetone and a polyester as major components which may indicate a common source. Two other drum samples contained substantial quantitites of other nonhalogenated solvents. All may be listed RCRA Hazardous Wastes under Subpart D of the regulations.

6. Three of the drum samples contained substantial quantities of chlorinated solvents. These may be listed RCRA Hazardous Wastes under Subpart D of the regulations.

7. Two drum samples were found to contain large amounts of calcium sulfate and calcium carbonate. One of these samples also characterized as a cadmium EP Toxicity Hazardous Waste. This composition as well as the cadmium EP Toxicity are similar to the drum E4 from the first set of samples.

ANALYTICAL RESULTS

Table 1 identifies the appropriate tag and drum numbers for each sample, describes the samples physically, summarizes the chemical composition of each sample phase, and lists the appropriate RCRA waste numbers for each sample based on the chemical analyses. Usually only major constituents are given in Table 1. Tables 3-5 present both major and minor constituent quantitative data utilized to formulate the compositions in Table 1. Infrared spectroscopy data only appear in Table 1. Table 2 lists the pertinent RCRA testing results for the Subpart C characterizations. The quality control data gathered concurrently with the analysis of the samples in the laboratory are presented in Tables 6-10. The overall representativeness of any individual analysis relative to what is actually in a drum is partially evaluated by the field replicate analysis data presented in Tables 11-13. Table 14 distinguishes which instrumental techniques were utilized for the analysis of each sample phase.

The compositions presented in Table 1 are a summary of many separate analyses. The intent of formulating these compositions is to provide a concise format for presenting the pertinent results and to invoke our interpretation of many of the data. The deductive interpretations involve the association of an anion with a cation based on ionic balances or qualitative infrared data, the oxidation state of some of the elements and the estimate of the amount of a compound or a class of compounds from the infrared spectra. The infrared estimates are assisted by other data gathered, for example the nitrogen content of a phase being used to calculate the amount of 3-(2-hydroxypropyl)-5-methyl-2-oxazolidinone.

All of the drum samples were analyzed for Aroclors (PCBs). Aroclor 1254 was found at a concentration of 70 mg/kg in the nonaqueous liquid portion of the sample from drum D-36. The nonaqueous liquid was 95% of the total sample. The remaining 5% paste was totally consumed by the EP Toxicity procedure and thus not available for PCB analysis. Based on the amount found in the nonaqueous liquid the total sample concentration would be 66 mg/kg Aroclor 1254.

Table 2 summarizes the critical data for the RCRA characterization analyses. Ignitability characterization is applicable to liquids, other than an aqueous solution containing less than 24% alcohol. Ten of the drum samples were found to have flashpoints less than 60°C. Two of these ten samples did contain alcohols at a total concentration less than 24% but contained little water. Therefore all ten samples were classified as D001 Ignitability Hazardous Waste. Flashpoints were determined for each liquid phase of a sample. The samples for drums D-20, D-38 and T-130 had two liquid phases. In Table 2 the highest flashpoint obtained was reported with a less than sign to indicate that the other liquid phase had a lower flashpoint. Table 3 reports all flashpoint data.

None of the drum samples were found to be D002 Corrosivity Hazardous Wastes based on pH measurements.

Under Subpart C section 261.23 of the RCRA regulations cyanide and sulfide bearing waste which can generate toxic gases in a quantity sufficient to present a danger to human health or the environment are D003 Reactivity Hazardous Wastes. As reported in Table 2, sulfide was found in the sample from drum D-4, cyanide was found in that from drum E-9, and both sulfide and cyanide were found

in the sample from drum D-20. The presence of sulfide and cyanide may characterize these samples as D003 Reactivity Hazardous Wastes.

Based on the elemental analyses, samples from twelve of the drums were selected for EP Toxicity testing. The concentrations of the eight EP Toxicity metal parameters were determined in the extracts. Five of the drum samples characterized as EP Toxicity Hazardous Wastes. The sample from drum D-12 was found to be EP Toxic for cadmium and chromium. Two of the Ignitability Wastes were also found to be EP Toxic. The sample for drum D-20 was EP Toxic for lead while that for drum T-130 was EP Toxic for arsenic and chromium. The drum E-9 sample was EP Toxic for cadmium and the drum T-144 sample was EP Toxic for arsenic. The EP Toxicity extraction for the sample from drum D-37 was not performed in a proper manner and therefore the results for this extract were considered undefensible. Based on the compositional analysis this sample would have been EP Toxic for chromium. All D007 Chromium EP Toxicity characterizations are based on total chromium. None of the extracts contained hexavalent chromium.

Table 3 presents the results of testing for twenty three parameters. Of concern for RCRA classification are pH, cyanide, sulfide and flashpoint. The quantitative total elemental constituents analysis results are reported in Table 4. The limit of detections reported in both of these tables represent 99.6% confidence intervals. The gas chromatographable organic analysis results are given in Table 5. As noted in the footnotes, some of the compounds were identified from library spectra only.

DATA QUALITY

In general, three types of quality control data can be gathered defining the the quality of the data obtained from an analysis. The quality of data depends foremost on how representative the sample analyzed is relative to what is sampled. It also depends on the accuracy and precision of the laboratory sample preparation technique for individual constituents and finally on the accuracy and precision of the measurement system utilized to measure the amount of the individual constituents in the sample preparations. All three types of quality control were gathered for this study. These data indicate as is usually the case that sample representativeness is the largest factor in controlling the achievable data quality.

Table 6-9 present the laboratory quality control data for the parameters reported in Tables 3 and 4. The gas chromatographable organic analysis quality control data are given in Tables 10 and 11. In these tables "measurement" refers to the determination of the amount of a constituent in a sample preparation while "analysis" refers to the total laboratory process of sample preparation plus measurement. In reviewing the precision data in these tables one must be cognizant of the fact that precision becomes poorer as the constituents concentration approximates the limit of detection. Generally, at the limit of detection, measurement precision is 100% relative standard deviation for replicate analyses or 200% relative difference for duplicate analyses. At concentrations ten times the limit of detection, the precision usually improves by a factor of ten, however, the overall achievable precision will be controlled by the sample preparation variability. Generally, the analysis precision for most parameters at concentrations well above the limit of detection was about

20% relative standard deviation. Often three measures were used to evaluate the accuracy of the laboratory results. Samples were spiked at both the measurement and analysis level and control samples of known composition were prepared and analyzed with the samples. Based on these measures, the results reported for the samples received at the laboratory are considered of a good accuracy. Generally these data indicate that the results reported fell within 20% of the true value for values well above the limit of detection of a particular constituent. This statement may not hold true for the estimated concentrations.

Three separate field samples were received at the laboratory for each of the drums D4, D20 and D38. The first step taken in the laboratory procedure is to separate the samples received into physical phases. The samples from drum D4 were all 100% solid. The other samples were multi-phase. We found these samples showed that the standard deviation of the percentages assigned to a phase was about 1%. This means that the sample received for analysis may not contain 1% of the matter in a drum at a 68% confidence interval or 2% at a 95% confidence interval. The impact of this finding is that when a constituent is associated with a minor phase of the contents of a drum, one will observe high variability in the concentration obtained for that constituent in replicate samples taken from the drum. It also means that the variability observed for any constituent will be a function of concentration. The relative variability will decrease with increasing concentration of a constituent. For example, a sample taken from a drum containing 98% solvent and 2% lead chromate may contain 100% solvent, 98% solvent and 2% lead chromate or 96% solvent and 4% lead chromate. The relative variability for the solvent would be 2% while that for the lead chromate would be 100%. This type of phenomenon was observed in the contents of the field triplicates.

The results for the elemental constituents analyses of these field replicate samples, based on the whole sample, are tabulated in Table 12. Many of the values reported are near the limit of detection for a particular constituent and thus reflect the measurement variability. Lead in all the samples is however well above it's limit of detection. For the drum samples for D4 and D20 all or most of the lead was associated with the solid phase of the samples. Lead, however, was found in both the nonaqueous liquid and the solid phases of the samples from drum D38. The association of the lead in a single phase of the sample seems to allow a better precision as opposed to distribution of the lead between phases. This may be due to the difficulties in reproducing aliquoting of a suspension. This leads one to the conclusion that phase separation may allow a better precision.

For the samples from drum D4 we have both laboratory precision (Table 7) and total precision (Table 12) as reflected in the field replicate data for the elemental constituents. Based on this data the field sampling in itself accounts for 65% of the total variability of the 34% relative standard deviation observed for lead. The percent relative standard deviation can be interpreted to mean that if another sample were taken from Drum D4, it would contain lead at a concentration between 1260 mg/kg to 6720 mg/kg at a 95% confidence interval or that if all the contents of the drum were analyzed that it would have a concentration of lead somewhere within this range.

Although the samples from Drum D4 were not found to be RCRA EP Toxicity Hazardous Wastes, all three were tested under this procedure. The other two sets of field triplicates had to be composited to makeup the 100 grams required by the procedure. Lead was detected at an average concentration of 0.45 mg/L in the extracts of the Drum D4 samples. The percent relative standard deviation for the three extracts was 44%. These data indicate that the variability observed in the elemental analyses of the field triplicates is reflected in the values obtained for the EP Toxicity procedure. If one takes the conservative approach of assuming that all EP Toxicity values reported have a 40% relative standard deviation then with 95% confidence the values reported will represent from 20% to 180% of what might be obtained if the entire contents of the drums had been tested. Assuming the values reported are 180% of the true value then Drum E9 would not be EP Toxic for cadmium and Drum T-130 would not be EP Toxic for arsenic.

Sulfide was detected in two of the three sets of field triplicates. Sulfide was found at an average concentration of 100 mg/kg in the samples from Drum D4 and 57 mg/kg in the samples from Drum D20. The relative standard deviations observed were 60% and 36%, respectively. Cyanide was detected in the field triplicate samples from Drum D20 with an average value of 5.3 mg/kg with relative standard deviation of 56%. On the average and at a 95% confidence interval this may indicate in the worst light that the values reported for sulfide and cyanide may be 200% higher than what is actually in the drums.

Table 13 presents the gas chromatographable organic analysis results for the field triplicates. For the samples from Drum D4 the amine compound had about the same relative standard deviation as the lead demonstrated in the same samples. The volatile constituents of the nonaqueous liquid portions of the samples from Drum D20 demonstrated a much higher variability then did the volatile constituents of the water miscible liquid portions of the samples from Drum D38. This same trend is observed in the percent volatiles data and the flashpoints for these phases reported in Table 3. That is, a higher variability was observed in the data for the liquid portions of the samples from Drum D20 then in the water miscible liquid portions from Drum D38. The high variability of the volatile data for Drum D20 may be due to the variability in the concentration of the oxazolidinone compound in the different samples. The concentration of the oxazolidinone compound reported in Table 1 was based on the nitrogen content of one of the liquids while the other two field triplicates were not analyzed for nitrogen content. We do know, however, that arsenic and zinc are associated with this compound. A correlation coefficent of about -0.95 was obtained between the sum of volatile constituents and the total arsenic or total zinc in the phases. This implies the variability observed was due to sampling and not an artifact of the analysis procedure.

Generally, it can be stated that field sampling procedures doubled the variability observed in the laboratory analysis of trace constituents. This impacts the interpretation of the significance of finding Aroclor 1254 at a concentration of 66 mg/kg in the sample from Drum 36. The laboratory variability for the this analysis was 7.1% relative standard deviation. Which would imply a 14% relative standard deviation at the field level or that with 95% confidence the actual concentration in the drum may not be over 47 mg/kg.

ANALYTICAL METHODOLOGY

For the compositional analyses, the samples were separated into phases which were usually analyzed separately. The major instrumental techniques used in the compositional analysis are given in Table 14 for each sample phase. The various organic extracts were screened by Gas Chromatography utilizing a variety of detector systems. Those extracts with organic matter were then analyzed by Gas Chromatography with Mass Spectroscopy detection. The PCBs were analyzed by Gas Chromatography alone. Infrared spectroscopy was utilized mainly to analyze the non-gas chromatographable organic constituents as well as any covalently bonded inorganic constituents.

Most of the sample phases were analyzed semi-quantitaively by Energy Dispersive X-ray Fluorescence Spectropscopy for applicable elemental constituents. Based on the X-ray analysis as well as the dissolved solids and water content results, selected sample phases were fused with potassium hydroxide and then dissolved in acid for quantitative elemental analysis by Plasma Emission Spectroscopy. A number of sample phases were simply diluted prior to Plasma Emission Spectroscopy. Mercury was determined by Cold Vapor Atomic Absorption after an acid digestion. Carbon, hydrogen and nitrogen were determined by combustion and column selective Differential Thermal Conductivity.

Ion Selective Potentiometry was utilized to determine pH. Acidity and alkalinity were determined by potentiometric titration. TDS was calculated from conductance measurements. Oxidants were spot tested using starch-iodide paper. Cyanide and sulfide were determined after spot testing by distillation and colorimetry. The water content was determined by Coulometric Karl Fischer titration. The percent volatile was determined by drying at 80'C under vacuum. Flashpoint was determined by the Seta Flash method. Fluoride was determined by Ion Selective Potentiometry while the other anions were determined by Ion Chromatography or Ion Exclusion Chromatography after dilution or extraction. Total organic carbon and inorganic carbon were determined by combustion and infrared detection for some of the water miscible liquids.

All EP Toxicity values reported were obtained in accordance with the analytical procedures detailed in the regulations and the OSW manual. The extracts were first analyzed for the eight metal parameters by Inductively Coupled Argon Plasma Optical Emission Spectroscopy. The results of these analyses were used to determine which extracts required further analysis by Atomic Absorption Spectroscopy. Only the values obtained by Atomic Absorption Spectroscopy are reported in Table 2.

cc. Meiggs

TABLE 1 DRUM SAMPLE IDENTIFICATION, DESCRIPTION & ANALYTICAL SUMMARY
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT NO.: A15

TAG NO.	DRUM NO.	COLLECTION DATE	COLLECTION TIME	LABORATORY'S DESCRIPTION OF SAMPLE CONTENTS (% WT.)	MAJOR CHEMICAL CONSTITUENTS	RCRA WASTE NUMBER
N5749 N5750 N5751	D4	11:17:82	13:15	100% BROWN PASTE	76% CARBON, 12% HYDROGEN AND 3% NITROGEN MOSTLY AS [66%] SATURATED HYDROCARBONS, [14%] AROMATIC HYDROCARBONS AND [5%] CARBONYL COMPOUNDS; 6% WATER; LEAD PROBABLY AS 0.5% LEAD SULFIDE.	D003 (S=)
N5753	D5	11:17:82	14:33	100% CLOUDY BROWN NONVISCOUS LIQUID	76% ACETONE; 3.1% SYTRENE; 1% WATER; REMAINDER 12% CARBON, 2.6% NITROGEN AND 1.2% HYDROGEN INCLUDING [8%] UNSATURATED AROMATIC POLYESTER.	D001 (9'C)
N5758	D7	11:17:82	14:50	99.5% CLEAR LIGHT BROWN NONVISCOUS NONAQUEOUS LIQUID	30% TRICHLOROETHENE; 24% 1,1,1 TRICHLOROETHANE; 5.3% ISOPROPANOL; 4.1% METHYLENE CHLORIDE; 1.4% CHLOROFORM ; {1%} TRICHLOROTRIFLUOROETHANE; 0.7% TETRACHLOROETHENE; 0.5% PHENOL; [30%] HYDROCARBONS INCLUDING 5.2% XYLENE, 4.9% TOLUENE AND 1.5% ETHYLBENZENE.	D001 (27'C)
				0.5% BROWN FINE GRAIN SOLID	25% VOLATILE; [17%] FERRIC OXIDE.	
N5835	D10	11:18:82	12:00	74.1% CLEAR ORANGE NONVISCOUS LIQUID	90% VOLATILE INCLUDING 55% ACETONE, 9% WATER AND 7.7% STYRENE; [10%] UNSATURATED AROMATIC POLYESTER PROBABLY AN ISOPHTHALATE POLYESTER; 2.1% NITROGEN.	D001 (21'C)
				25.9% BROWN FINE & COARSE GRAIN SOLID	72% VOLATILE; [20%] UNSATURATED AROMATIC POLYESTER PROBABLY AN ISOPHTHALATE POLYESTER; 2% ALUMINUM SILICATES; 1.4% TITANIUM DIOXIDE; PERHAPS 1.3% TALC.	
N5795	D12	11:18:82	12:15	83.6% OPAQUE BROWN NONVISCOUS NONAQUEOUS LIQUID	45% 1,2-DICHLOROBENZENE; 40% 2-METHYLPHENOL; 9% WATER ; 6.4% 1,4-DICHLOROBENZENE; 3.2% 1,3-DICHLOROBENZENE.	D006 (CD) D007 (CR)
				16.4% CLEAR BROWN NONVISCOUS	92% WATER; pH = 10.3; {2%} 1,2-BUTANEDIOL; {<1%} 1-CHLORO-2-BUTANOL; [1%] CARBOXYLATE; 1% SODIUM CARBONATE; 0.5% TRIVALENT CHROMIUM.	
N5804	D17	11:18:82	12:50	100% CLOUDY BROWN NONVISCOUS LIQUID	67% WATER; 23% ACETONE; [2%] CARBONYL COMPOUND; [2%] CARBOXYLATE PROBABLY INCLUDING 0.5% SODIUM.	D001 (27'C)

[XX%] = ESTIMATE BASED ON INFRARED SPECTROSCOPY
{XX%} = ESTIMATE & TENTATIVE MASS SPECTROSCOPY IDENTIFICATION BASED ON LIBRARY SPECTRUM; NO STANDARD AVAILABLE FOR CONFIRMATION

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PROJECT NO A15

TAG NO.	DRUM NO.	COLLECTION DATE	COLLECTION TIME	LABORATORY'S DESCRIPTION OF SAMPLE CONTENTS (% WT.)	MAJOR CHEMICAL CONSTITUENTS	RCRA WASTE NUMBER
N5806	D18	11:18:82	13:30	99.3% GRAY PASTE	57% CALCIUM SULFATE DIHYDRATE; 23% WATER; 17% CALCIUM CARBONATE HEXAHYDRATE; 1% HYDRATED ALUMINUM SILICATE.	
				0.7% CLOUDY BROWN NONVISCOUS WATER MISCIBLE LIQUID	98% WATER.	
N5808 N5809 N5810	D20	11:18:82	13:37	94% OPAQUE BROWN VISCOUS LIQUID	[25%] 3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZOLIDINONE; 19% WATER; 12% PHENOL; 11% METHYLPHENOL; 2% 4-ETHYL-PHENOL; [20%] HYDROCARBONS INCLUDING 0.6% XYLENE 0.6% TOLUENE AND 0.4% ACETONE.	D001 (<39'C) D003(CN & S=) D008 (PB)
				6% DARK BROWN PASTE	[33%] 3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZOLIDINONE; [25%] HYDROCARBONS; 10% INORGANIC MATERIAL INCLUDING 1% LEAD.	
N5819	D22	11:18:82	14:35	98.8% BROWN NONVISCOUS WATER MISCIBLE LIQUID	91% WATER; PH = 3.2; 3.5% ORGANIC CARBON INCLUDING CARBOXYLIC ACIDS; 1.9% FERRIC CHLORIDE; 0.4% SODIUM CHLORIDE.	
				1.2% RED PASTE	9% VOLATILE; MOSTLY FERRIC OXIDE SOME CARBOXYLATES.	
N5820	D23	11:18:82	14:45	100% CLEAR YELLOW NONVISCOUS WATER MISCIBLE LIQUID WITH SOME SUSPENDED PARTICLES	>99% WATER; PH = 3.6; 0.1% FERRIC CHLORIDE.	
N5814	D25	11:18:82	14:25	99.5% OPAQUE PURPLE NONVISCOUS NONAQUEOUS LIQUID	44% TOLUENE; 30% METHYL ISOBUTYL KETONE; [7%] NITRO-CELLULOSE MODIFIED ALKYD RESIN; 3% 2-ETHOXY ETHYL ACETATE; 3% XYLENE; {2%} C4 ALKANOIC ACID , C4 ALKYL ESTER; 1.6% ETHANOL; 1.2% WATER.	D001 (<9'C)
				0.5% GRAY PASTE	92% VOLATILE; [4%] TITANIUM DIOXIDE; [2%] NITROCELLU-LOSE; [1%] AN ESTER.	

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WESTERN PROCESSING, INC KENT,WA
PROJECT NO A15

TAG NO.	DRUM NO.	COLLECTION DATE	COLLECTION TIME	LABORATORY'S DESCRIPTION OF SAMPLE CONTENTS (% WT.)	MAJOR CHEMICAL CONSTITUENTS	RCRA WASTE NUMBER
N5824	D26	11:18:82	15:04	99.4% CLOUDY YELLOW NONVISCOUS WATER MISCIBLE LIQUID	>99% WATER; PH = 4.2; 0.4% 2-ETHOXY ETHYL ACETATE.	
				0.6% ORANGE PASTE	64% VOLATILE; MOSTLY FERRIC OXIDE.	
N5827	D27	11:18:82	15:10	99.5% CLEAR YELLOW NONVISCOUS WATER MISCIBLE LIQUID	48% WATER; 33% ACETONE; [1%] O-PHTHALATE POLYESTER;	D001 (<9'C)
				0.5% YELLOW PASTE	7% VOLATILE; MOSTLY O-PHTHALATE POLYESTER.	
N5881	D30	11:19:82	8:50	99.4% CLOUDY YELLOW NONVISCOUS WATER MISCIBLE LIQUID	>99% WATER; PH = 7.1.	
				0.6% GRAY PASTE	77% VOLATILE; [8%] ESTER; [7%] CARBOXYLATE; [6%] SILICATES.	
N5866	D36	11:19:82	10:17	95% OPAQUE BROWN VISCOUS NON-AQUEOUS LIQUID	82% TRICHLOROETHENE; [8%] AN AROMATIC ESTER; [8%] POLYETHER SIMILAR TO BISPHENOL-A EPOXY RESIN; 0.7% XYLENE; 70 MG/KG AROCLOR 1254.	D001 (19'C)
				5% GRAY PASTE	60% VOLATILE; 23% CRYSTALLINE SILICA; 5.3% FERRIC OXIDE; 2% TITANIUM DIOXIDE; [2%] AN AROMATIC ESTER; [2%] POLYETHER SIMILAR TO BISPHENOL-A EPOXY RESIN.	
N5841	D37	11:19:82	10:10	97% CLOUDY GREEN NONVISCOUS WATER MISCIBLE LIQUID	99% WATER; PH = 3.7; 0.05% TRIVALENT CHROMIUM.	
				3% BROWN PASTE	60% VOLATILE; 21% HYDRATED FERRIC OXIDE; 12% FERROUS CHROMITE; [3%] CARBOXYLATE; 2.2% FERROUS TUNGSTENATE; 1.6% ALUMINUM SILICATES.	

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EPA/NEIC/DENVER

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PROJECT NO A15

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N5845 N5846 N5847	D38	11:19:82	10:40	93% CLEAR PURPLE NONVISCOUS WATER MISCIBLE LIQUID	32% ETHANOL; 14% N-PROPANOL; 12% N-PROPYL ACETATE; 13% WATER; 9.3% 2-BUTOXY ETHANOL; 7.3% 1,2-DICHLORO-BENZENE; 3% XYLENE; 2% ETHYL ACETATE; 1% METHANOL; 0.6% ISOPROPANOL; [3%] ALIPHATIC SECONDARY AMIDE OR POLYAMIDE; [1.5%] SATURATED HYDROCARBONS; [0.2%] CYANIDE PROBABLY FERRI-FERRO-CYANIDE.	D001 (<27'C)
				6% CLOUDY PURPLE VISCOUS NON-AQUEOUS LIQUID	37% VOLATILE INCLUDING 13% WATER, 5.2% ETHANOL, 2.9% N-PROPANOL; [37%] ALIPHATIC SECONDARY AMIDE OR POLY-AMIDE; [19%] SATURATED HYDROCARBONS; [3%] CYANIDE PROBABLY FERRI-FERRO-CYANIDE; 1.5% LEAD CHROMATE; 1.4% TITANIUM DIOXIDE; 0.5% LEAD MOLYBDATE.	
				1% GRAY & PURPLE FINE GRAINED SOLID	29% VOLATILE; [30%] ALIPHATIC SECONDARY AMIDE OR POLYAMIDE; [16%] SATURATED HYDROCARBONS; 10% LEAD CHROMATE; 7% TITANIUM DIOXIDE; 2% LEAD MOLYBDATE; [2%] CYANIDE PROBABLY FERRI-FERRO-CYANIDE; 1% ALUMI-NUM SILICATES.	
N5864	E9	11:19:82	11:45	100% BROWN FINE & COARSE GRAIN SOLID	56% CALCIUM CARBONATE, HEXAHYDRATE; 22% CALCIUM SUL-FATE, DIHYDRATE; 9.7% FERROUS CARBONATE, MONOHYDRATE; 4.7% ZINC CARBONATE; 4% HYDRATED ALUMINUM SILICATES;	D003 (CN-) D006 (CD)
N5834	T130	11:18:82	11:20	55.9% CLEAR BROWN NONVISCOUS NONAQUEOUS LIQUID	[80%] HYDROCARBONS INCLUDING 14% TOLUENE, 14% XYLENE , 5% TRIMETHYLBENZENE, 4% ETHYLTOLUENE AND 3% ETHYL-BENZENE; [20%] 3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZO-LIDINONE; 2% METHYL ISOBUTYL KETONE; 2% ISOBUTYL ACE-TATE.	D001 (<29'C) D004 (AS) D007 (CR)
				44.1% CLEAR BROWN VISCOUS WATER MISCIBLE LIQUID	[74%] 3-(2-HYDROXYLPROPYL)-5-METHYL-2-OXAZOLIDINONE; [13%] HYDROCARBONS INCLUDING 3.4% TOLUENE, 2.5% XYLENE, 0.6% ETHYLBENZENE, 0.5% ETHYLTOLUENE AND 0.5% TRIMETHYLBENZENE; 6% WATER; 1.4% 2-ETHOXY ETHYL ACE-TATE; 1.1% METHYL ISOBUTYL KETONE; 0.4% METHYLENE CHLORIDE.	
N5775	T144	11:17:82	11:45	100% CLEAR BROWN VISCOUS WATER MISCIBLE LIQUID WITH SOME SUS-PENDED BLACK PARTICLES	[85%] 3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZOLIDINONE; [10%] HYDROCARBONS; 2% WATER.	D004 (AS)

[XX%] = ESTIMATE BASED ON INFRARED SPECTROSCOPY
{XX%} = ESTIMATE & TENTATIVE MASS SPECTROSCOPY IDENTIFICATION BASED ON LIBRARY SPECTRUM; NO STANDARD AVAILABLE FOR CONFIRMATION

TABLE 2 RCRA CHARACTERIZATION ANALYSIS
WESTERN PROCESSING INC., KENT, WASH.
PROJECT A15

CHARACTERIZATION:	IGNITABILITY	REACTIVITY		EP TOXICITY (1)			
WASTE NO.:	D001	D003	D003	D004	D006	D007	D008
PARAMETER:	FLASHPOINT	CYANIDE	SULFIDE	ARSENIC	CADMIUM	CHROMIUM	LEAD
LIMIT :	< OR = 60	SEE FOOTNOTE (2)		> OR = 5.0	> OR = 1.0	> OR = 5.0	> OR = 5.0
UNITS :	'C	MG/KG	MG/KG	MG/L	MG/L	MG/L	MG/L
DRUM NO.	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE
D-4			100.				
D-5	< 9.						
D-7	27.						
D-10	21.						
D-12					5.73	74.0	
D-17	27.						
D-20	< 39.	5.4	57.				22.7
D-25	< 9.						
D-27	< 9.						
D-36	19.						
D-38	< 27.						
E-9		6.7			1.02		
T-130	< 29.			6.0		19.1	
T-144				13.7			

1. THE SAMPLES FROM DRUMS D4, D10, D12, D18, D20, D22, D36, D38, E9, T130 AND T144 WERE CHARACTERIZED UNDER EP TOXICITY.
2. A QUANTITY SUFFICIENT TO PRESENT A DANGER TO HUMAN HEALTH OR THE ENVIRONMENT. DEPENDS ON CIRCUMSTANCES OF STORAGE.

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TABLE 3

GENERAL CONSTITUENT ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

DRUM NO.		D4	D4	D4	D5	D7	D7	T144	D12	
TAG NO.		N5749	N5750	N5751	N5753	N5758	N5758	N5775	N5795	
% SAMPLE		100%	100%	100%	100%	0.5%	99.5%	100%	16.4%	
PHASE		SOLID	SOLID	SOLID	NONAQUEOUS LIQUID	SOLID	NONAQUEOUS LIQUID	WATER MISC LIQUID	WATER MISC LIQUID	
PARAMETER	UNITS	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD
PH	STD UNITS	NA	NA	NA	NA	NA	NA	11.	10.3	
PH (1:100)	STD UNITS	6.1	6.1	6.6	NA	NA	NA	NA	NA	
ALKALINITY	MEQ/G	NA	NA	NA	NA	NA	NA	.48	.22	.0002
ACIDITY	MEQ/G	NA	NA	NA	NA	NA	NA	NA	NA	.0002
TDS1	%	.05	.02	.06	NA	NA	NA	.47	2.6	.01
TDS2	%	.08	.03	.10	NA	NA	NA	.77	4.2	.01
CYANIDE	MG/KG	ND	ND	ND	ND	NA	ND	ND	ND	.5
OXIDANT	MG/KG CL	ND	ND	ND	NA	NA	NA	ND	ND	5.
SULFIDE	MG/KG	58.	77.	173.	ND	NA	ND	ND	ND	1.
WATER	%	NA	NA	NA	1.2	NA	ND	1.8	92.4	.2
VOLATILE	%	4.5	3.8	3.5	91.9	25.4	98.9	2.4	93.1	.1
FLASHPOINT	'C	NA	NA	NA	< 9.	NA	27.	> 64.	> 64.	
BROMIDE	MG/KG	ND	ND	ND	NA	NA	NA	NA	ND	10.
CHLORIDE	MG/KG	60.	10.	10.	NA	NA	NA	NA	350.	10.
FLUORIDE	MG/KG	ND	ND	ND	NA	NA	NA	NA	1860.	.5
NITRATE	MG/KG NO3-	ND	ND	ND	NA	NA	NA	NA	240.	50.
NITRITE	MG/KG NO2-	ND	ND	ND	NA	NA	NA	NA	ND	10.
PHOSPHATE	MG/KG PO4=-	ND	ND	ND	NA	NA	NA	NA	210.	20.
SULFATE	MG/KG SO4=	60.	ND	ND	NA	NA	NA	NA	4400.	50.
ACETATE	MG/KG	NA	NA	NA	NA	NA	NA	NA	NA	50.
FORMATE	MG/KG	NA	NA	NA	NA	NA	NA	NA	NA	20.
PROPIONATE	MG/KG	NA	NA	NA	NA	NA	NA	NA	NA	30.
TOC	% C	NA	NA	NA	NA	NA	NA	NA	21.5	.02
TIC	% C	NA	NA	NA	NA	NA	NA	NA	1.0	.04

LOD = LIMIT OF DETECTION
ND = LESS THAN LOD
NA = NOT ANALYZED

EPA/NEIC/DENVER

TABLE 3 GENERAL CONSTITUENT ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

DRUM NO.		D12	D17	D18	D18	D20	D20	D20	D20	
TAG NO.		N5795	N5804	N5806	N5806	N5808	N5808	N5809	N5809	
% SAMPLE		83.6%	100%	0.7%	99.3%	6.%	94.%	7.%	93.%	
PHASE		NONAQUEOUS LIQUID	NONAQUEOUS LIQUID	WATER MISC LIQUID	SOLID	SOLID	NONAQUEOUS LIQUID	SOLID	NONAQUEOUS LIQUID	
PARAMETER	UNITS	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD
PH	STD UNITS	NA	NA	7.9	NA	NA	NA	NA	NA	
PH (1:100)	STD UNITS	NA	NA	NA	6.2	8.2	NA	8.3	NA	
ALKALINITY	MEQ/G	NA	NA	NA	NA	.58	NA	.16	NA	.0002
ACIDITY	MEQ/G	NA	NA	NA	NA	NA	NA	NA	NA	.0002
TDS1	%	NA	NA	.14	12.	2.1	NA	2.3	NA	.01
TDS2	%	NA	NA	.22	19.	3.4	NA	3.8	NA	.01
CYANIDE	MG/KG	ND	ND	NA	ND	39.	1.2	28.	1.9	.5
OXIDANT	MG/KG CL	NA	NA	NA	ND	ND	NA	ND	NA	5.
SULFIDE	MG/KG	ND	ND	NA	ND	179.	24.	325.	45.	1.
WATER	%	8.7	67.4	98.4	23.7	NA	19.1	NA	17.4	.2
VOLATILE	%	81.2	95.2	NA	41.6	24.6	66.3	40.4	58.7	.1
FLASHPOINT	'C	> 64.	27.	NA	NA	NA	24.	NA	22.	
BROMIDE	MG/KG	NA	NA	ND	NA	NA	ND	100.	180.	10.
CHLORIDE	MG/KG	NA	NA	20.	NA	NA	160.	7200.	12000.	10.
FLUORIDE	MG/KG	NA	NA	6.	NA	NA	ND	23.	9.6	.5
NITRATE	MG/KG NO3-	NA	NA	ND	NA	NA	ND	ND	ND	50.
NITRITE	MG/KG NO2-	NA	NA	ND	NA	NA	20.	20.	ND	10.
PHOSPHATE	MG/KG PO4=-	NA	NA	20.	NA	NA	ND	420.	30.	20.
SULFATE	MG/KG SO4=	NA	NA	2800.	NA	NA	ND	860.	1200.	50.
ACETATE	MG/KG	NA	NA	NA	NA	NA	360.	1500.	2300.	50.
FORMATE	MG/KG	NA	NA	NA	NA	NA	50.	460.	700.	20.
PROPIONATE	MG/KG	NA	NA	NA	NA	NA	ND	40.	70.	30.
TOC	% C	NA	NA	ND	NA	NA	NA	NA	NA	.02
TIC	% C	NA	NA	ND	NA	NA	NA	NA	NA	.04

LOD = LIMIT OF DETECTION
ND = LESS THAN LOD
NA = NOT ANALYZED

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TABLE 3 GENERAL CONSTITUENT ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

DRUM NO.		D20	D20	D25	D25	D22	D22	D23	D26	
TAG NO.		N5810	N5810	N5814	N5814	N5819	N5819	N5820	N5824	
% SAMPLE		5.%	95.%	0.5%	99.5%	98.8%	1.2%	100%	99.4%	
PHASE		SOLID	NONAQUEOUS LIQUID	SOLID	NONAQUEOUS LIQUID	WATER MISC LIQUID	SOLID	WATER MISC LIQUID	WATER MISC LIQUID	
PARAMETER	UNITS	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD
PH	STD UNITS	NA	NA	NA	NA	3.2	NA	3.6	4.2	
PH (1:100)	STD UNITS	8.5	NA	NA	NA	NA	NA	NA	NA	
ALKALINITY	MEQ/G	.2	NA	NA	NA	NA	NA	NA	NA	.0002
ACIDITY	MEQ/G	NA	NA	NA	NA	.46	NA	.036	.03	.0002
TDS1	%	2.	NA	NA	NA	3.	NA	.17	.17	.01
TDS2	%	3.3	NA	NA	NA	4.9	NA	.28	.28	.01
CYANIDE	MG/KG	70.	5.6	NA	ND	ND	NA	ND	ND	.5
OXIDANT	MG/KG CL	ND	NA	NA	NA	ND	NA	ND	ND	5.
SULFIDE	MG/KG	400.	55.	NA	ND	ND	NA	ND	ND	1.
WATER	%	NA	NA	NA	1.2	91.	NA	> 99.	> 99.	.2
VOLATILE	%	38.9	71.5	92.1	93.3	95.4	9.1	NA	99.8	.1
FLASHPOINT	'C	NA	39.	NA	< 9.	> 64.	NA	> 64.	> 64.	
BROMIDE	MG/KG	100.	110.	NA	NA	10.	NA	ND	ND	10.
CHLORIDE	MG/KG	6400.	ND	NA	NA	16000.	NA	660.	550.	10.
FLUORIDE	MG/KG	29.1	6.1	NA	NA	1.9	NA	ND	ND	.5
NITRATE	MG/KG NO3-	570.	ND	NA	NA	300.	NA	ND	ND	50.
NITRITE	MG/KG NO2-	50.	10.	NA	NA	ND	NA	ND	ND	10.
PHOSPHATE	MG/KG PO4=-	480.	60.	NA	NA	ND	NA	ND	90.	20.
SULFATE	MG/KG SO4=	780.	760.	NA	NA	2100.	NA	50.	60.	50.
ACETATE	MG/KG	1300.	1400.	NA	NA	NA	NA	NA	NA	50.
FORMATE	MG/KG	420.	390.	NA	NA	NA	NA	NA	NA	20.
PROPIONATE	MG/KG	ND	110.	NA	NA	NA	NA	NA	NA	30.
TOC	% C	NA	NA	NA	NA	3.5	NA	.12	.21	.02
TIC	% C	NA	NA	NA	NA	.3	NA	ND	ND	.04

LOD = LIMIT OF DETECTION
ND = LESS THAN LOD
NA = NOT ANALYZED

EPA/NEIC/DENVER

TABLE 3 GENERAL CONSTITUENT ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

DRUM NO.		D26	D27	D27	T130	T130	D10	D10	D37	
TAG NO.		N5824	N5827	N5827	N5834	N5834	N5835	N5835	N5841	
% SAMPLE		0.6%	99.5%	0.5%	44.1%	55.9%	25.9%	74.1%	97.0%	
PHASE		SOLID	WATER MISC LIQUID	SOLID	WATER MISC LIQUID	NONAQUEOUS LIQUID	SOLID	NONAQUEOUS LIQUID	WATER MISC LIQUID	
PARAMETER	UNITS	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD
PH	STD UNITS	NA	5.4	NA	9.5	NA	NA	NA	3.7	
PH (1:100)	STD UNITS	NA	NA	NA	NA	NA	NA	NA	NA	
ALKALINITY	MEQ/G	NA	NA	NA	.28	NA	NA	NA	NA	.0002
ACIDITY	MEQ/G	NA	.0174	NA	NA	NA	NA	NA	.164	.0002
TDS1	%	NA	.11	NA	.29	NA	NA	NA	.31	.01
TDS2	%	NA	.17	NA	.48	NA	NA	NA	.51	.01
CYANIDE	MG/KG	NA	ND	NA	ND	ND	NA	NA	ND	.5
OXIDANT	MG/KG CL	NA	ND	NA	ND	NA	NA	NA	PNQ	5.
SULFIDE	MG/KG	NA	ND	NA	ND	ND	NA	ND	ND	1.
WATER	%	NA	47.8	NA	6.3	ND	NA	9.	98.6	.2
VOLATILE	%	64.	98.8	6.7	21.8	93.9	72.4	89.5	96.9	.1
FLASHPOINT	'C	NA	< 9.	NA	29.	17.	NA	21.	> 64.	
BROMIDE	MG/KG	NA	NA	NA	NA	NA	NA	NA	10.	10.
CHLORIDE	MG/KG	NA	NA	NA	NA	NA	NA	NA	210.	10.
FLUORIDE	MG/KG	NA	NA	NA	NA	NA	NA	NA	1310.	.5
NITRATE	MG/KG NO3-	NA	NA	NA	NA	NA	NA	NA	2200.	50.
NITRITE	MG/KG NO2-	NA	NA	NA	NA	NA	NA	NA	ND	10.
PHOSPHATE	MG/KG PO4=-	NA	NA	NA	NA	NA	NA	NA	ND	20.
SULFATE	MG/KG SO4=	NA	NA	NA	NA	NA	NA	NA	100.	50.
ACETATE	MG/KG	NA	NA	NA	NA	NA	NA	NA	NA	50.
FORMATE	MG/KG	NA	NA	NA	NA	NA	NA	NA	NA	20.
PROPIONATE	MG/KG	NA	NA	NA	NA	NA	NA	NA	NA	30.
TOC	% C	NA	22.4	NA	NA	NA	NA	NA	.07	.02
TIC	% C	NA	2.	NA	NA	NA	NA	NA	ND	.04

LOD = LIMIT OF DETECTION
PNQ = PRESENT NOT QUANTIFIED
ND = LESS THAN LOD
NA = NOT ANALYZED

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TABLE 3 GENERAL CONSTITUENT ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

DRUM NO.		D37	D38	D38	D38	D38	D38	D38	D38	
TAG NO.		N5841	N5845	N5845	N5845	N5846	N5846	N5847	N5847	
% SAMPLE		3.0%	92.%	1.%	7.%	95.%	5.%	93.%	2.%	
PHASE		SOLID	WATER MISC LIQUID	SOLID	NONAQUEOUS LIQUID	WATER MISC LIQUID	NONAQUEOUS LIQUID	WATER MISC LIQUID	SOLID	
PARAMETER	UNITS	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD
PH	STD UNITS	NA	5.8	NA	NA	6.2	NA	6.1	NA	
PH (1:100)	STD UNITS	NA	NA	NA	NA	NA	NA	NA	NA	
ALKALINITY	MEQ/G	NA	NA	NA	NA	NA	NA	NA	NA	.0002
ACIDITY	MEQ/G	NA	.016	NA	NA	.016	NA	.014	NA	.0002
TDS1	%	NA	.07	NA	NA	.07	NA	.07	NA	.01
TDS2	%	NA	.11	NA	NA	.12	NA	.12	NA	.01
CYANIDE	MG/KG	NA	ND	NA	ND	ND	ND	ND	ND	.5
OXIDANT	MG/KG CL	NA	ND	NA	NA	ND	NA	ND	NA	5.
SULFIDE	MG/KG	NA	ND	NA	ND	ND	ND	ND	ND	1.
WATER	%	NA	13.5	NA	13.6	13.4	9.6	13.2	NA	.2
VOLATILE	%	89.5	94.8	29.8	44.7	94.7	28.7	94.7	26.7	.1
FLASHPOINT	'C	NA	17.	NA	27.	17.	NA	19.	NA	
BROMIDE	MG/KG	NA	50.	NA	ND	30.	ND	30.	NA	10.
CHLORIDE	MG/KG	NA	20.	NA	10.	20.	10.	20.	NA	10.
FLUORIDE	MG/KG	NA	ND	NA	ND	1.0	ND	ND	NA	.5
NITRATE	MG/KG NO3-	NA	100.	NA	ND	100.	ND	80.	NA	50.
NITRITE	MG/KG NO2-	NA	10.	NA	ND	10.	ND	10.	NA	10.
PHOSPHATE	MG/KG PO4=-	NA	30.	NA	ND	30.	ND	30.	NA	20.
SULFATE	MG/KG SO4=	NA	ND	NA	ND	ND	ND	ND	NA	50.
ACETATE	MG/KG	NA	630.	NA	250.	500.	NA	780.	NA	50.
FORMATE	MG/KG	NA	60.	NA	ND	40.	NA	ND	NA	20.
PROPIONATE	MG/KG	NA	ND	NA	ND	ND	NA	ND	NA	30.
TOC	% C	NA	NA	NA	NA	NA	NA	NA	NA	.02
TIC	% C	NA	NA	NA	NA	NA	NA	NA	NA	.04

LOD = LIMIT OF DETECTION
ND = LESS THAN LOD
NA = NOT ANALYZED

EPA/NEIC/DENVER

TABLE 3 GENERAL CONSTITUENT ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

DRUM NO.		D38	E9	D36	D36	D30	D30			
TAG NO.		N5847	N5864	N5866	N5866	N5881	N5881			
% SAMPLE		5.%	100%	5.0%	95.0%	99.4%	0.6%			
PHASE		NONAQUEOUS LIQUID	SOLID	SOLID	NONAQUEOUS LIQUID	WATER MISC LIQUID	SOLID			
PARAMETER	UNITS	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD
PH	STD UNITS	NA	NA	NA	NA	7.1	NA			
PH (1:100)	STD UNITS	NA	10.2	NA	NA	NA	NA			
ALKALINITY	MEQ/G	NA	.062	NA	NA	NA	NA			.0002
ACIDITY	MEQ/G	NA	NA	NA	NA	NA	NA			.0002
TDS1	%	NA	9.	NA	NA	.03	NA			.01
TDS2	%	NA	15.	NA	NA	.05	NA			.01
CYANIDE	MG/KG	ND	6.7	NA	ND	ND	NA			.5
OXIDANT	MG/KG CL	NA	NA	NA	NA	ND	NA			5.
SULFIDE	MG/KG	ND	NA	NA	ND	ND	NA			1.
WATER	%	13.6	32.2	NA	ND	> 99.	NA			.2
VOLATILE	%	38.	42.6	60.4	82.	NA	77.2			.1
FLASHPOINT	'C	NA	NA	NA	19.	> 64.	NA			
BROMIDE	MG/KG	NA	ND	NA	NA	ND	NA			10.
CHLORIDE	MG/KG	NA	430.	NA	NA	30.	NA			10.
FLUORIDE	MG/KG	NA	145.	NA	NA	.5	NA			.5
NITRATE	MG/KG NO3-	NA	120.	NA	NA	ND	NA			50.
NITRITE	MG/KG NO2-	NA	ND	NA	NA	ND	NA			10.
PHOSPHATE	MG/KG PO4=-	NA	90.	NA	NA	50.	NA			20.
SULFATE	MG/KG SO4=	NA	95000.	NA	NA	120.	NA			50.
ACETATE	MG/KG	NA	NA	NA	NA	NA	NA			50.
FORMATE	MG/KG	NA	NA	NA	NA	NA	NA			20.
PROPIONATE	MG/KG	NA	NA	NA	NA	NA	NA			30.
TOC	% C	NA	NA	NA	NA	.07	NA			.02
TIC	% C	NA	NA	NA	NA	ND	NA			.04

LOD = LIMIT OF DETECTION
ND = LESS THAN LOD
NA = NOT ANALYZED

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TABLE 4 ELEMENTAL CONSTITUENTS ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATIONS IN MG/KG WET WEIGHT

DRUM NO.	D4	D4	D4	D5	D7	T144	D12		
TAG NO.	N5749	N5750	N5751	N5753	N5758	N5775	N5795		
PHASE	SOLID	SOLID	SOLID	NONAQUEOUS	NONAQUEOUS	WATER MISC.	WATER MISC.		
ELEMENT	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD	LOD #
AL	ND	ND	ND	ND	ND	100.	ND	100.	1.
SB#	35.	ND	3.	6.	ND	3.	4.	1.	.04
AS#	21.	ND	3.	ND	ND	77.	ND	1.	.02
BA	ND	ND	ND	ND	ND	ND	ND	20.	.4
BE#	ND	ND	ND	ND	ND	ND	ND	1.	.01
B	ND	ND	ND	ND	ND	ND	ND	40.	1.
CD#	3.	ND	ND	ND	ND	ND	ND	1.	.02
CA	300.	ND	100.	ND	ND	ND	ND	100.	.1
C	NA	NA	756000.	602000.	480000.	536000.	NA	1000.	
CR#	ND	ND	ND	ND	ND	ND	5270.	4.	.1
CO	ND	ND	ND	43.	ND	ND	ND	4.	.02
CU#	ND	ND	ND	ND	ND	11.	ND	3.	.5
H	NA	NA	116000.	93000.	54000.	86000.	NA	2000.	
FE	250.	1010.	100.	ND	30.	80.	ND	10.	.2
LA	ND	ND	ND	ND	ND	ND	ND	3.	.1
PB#	6400.	3510.	3860.	ND	ND	ND	ND	10.	.01
MG	70.	ND	50.	ND	ND	ND	ND	40.	.2
MN	10.	13.	2.	ND	ND	ND	ND	2.	.006
HG#	ND	ND	ND	ND	ND	ND	ND	.8	.8
MO	ND	7.	ND	ND	ND	ND	ND	5.	.4
NI#	ND	ND	ND	5.	ND	ND	ND	4.	.2
N	NA	NA	29000.	26000.	ND	75300.	ND	2000.	
P	ND	ND	ND	100.	ND	ND	ND	60.	
K	NA	NA	NA	NA	NA	NA	NA		.2
SC	ND	ND	ND	ND	ND	ND	ND	.4	.01
SE#	2.	ND	ND	ND	ND	ND	ND	2.	.03
SI	400.	ND	ND	ND	ND	ND	ND	100.	2.
AG#	ND	ND	ND	ND	ND	ND	ND	1.	.06
NA	ND	ND	ND	ND	ND	ND	4200.	500.	6.
SR	ND	ND	ND	ND	ND	ND	ND	1.	.03
S	6800.	6710.	6490.	ND	ND	500.	1780.	50.	
TL#	ND	ND	ND	ND	ND	ND	ND	60.	3.
TI	ND	ND	ND	ND	ND	ND	ND	3.	.03
W	ND	ND	ND	ND	ND	ND	ND	10.	.5
V	4.	ND	ND	ND	ND	ND	ND	2.	.1
Y	ND	ND	ND	ND	ND	ND	ND	2.	.08
ZN#	70.	70.	30.	ND	ND	ND	ND	10.	.2
ZR	ND	ND	ND	ND	ND	ND	ND	1.	.04

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EPA/NEIC/DENVER

TABLE 4 ELEMENTAL CONSTITUENTS ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATIONS IN MG/KG WET WEIGHT

DRUM NO.	D12	D17	D18	D20	D20	D20	D20		
TAG NO.	N5795	N5804	N5806	N5808	N5808	N5809	N5809		
PHASE	NONAQUEOUS	NONAQUEOUS	SOLID	SOLID	NONAQUEOUS	SOLID	NONAQUEOUS		
ELEMENT	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD	LOD #
AL	ND	ND	900.	4000.	ND	1600.	100.	100.	1.
SB#	1.	ND	12.	25.	1.	8.	2.	1.	.04
AS#	ND	ND	3.	350.	2.	125.	13.	1.	.02
BA	ND	ND	ND	1410.	20.	440.	60.	20.	.4
BE#	ND	ND	ND	ND	ND	ND	ND	1.	.01
B	ND	ND	ND	ND	ND	ND	ND	40.	1.
CD#	29.	ND	ND	193.	ND	61.	8.	1.	.02
CA	ND	ND	177000.	10100.	400.	4200.	700.	100.	.1
C	NA	NA	10000.	NA	NA	406000.	482000.	1000.	
CR#	270.	ND	36.	619.	10.	236.	36.	4.	.1
CO	ND	1110.	ND	262.	14.	87.	24.	4.	.02
CU#	6.	ND	4.	1590.	11.	515.	63.	3.	.5
FE	20.	760.	800.	17000.	1490.	9930.	1590.	10.	.2
H	NA	NA	NA	NA	NA	43000.	95000.	2000.	
LA	ND	ND	ND	ND	ND	ND	ND	3.	.1
PB#	50.	ND	360.	13800.	70.	4820.	690.	10.	.01
MG	ND	ND	410.	1170.	ND	570.	90.	40.	.2
MN	ND	39.	30.	401.	22.	148.	30.	2.	.006
HG#	ND	ND	ND	ND	ND	ND	ND	.8	.8
MO	ND	ND	ND	66.	ND	20.	ND	5.	.4
NI#	ND	9.	ND	55.	ND	21.	ND	4.	.2
N	NA	NA	ND	ND	ND	29000.	22000.	2000.	
K	NA	NA	NA	NA	NA	NA	NA		.2
P	ND	ND	ND	1080.	NA	NA	NA	60.	
SC	ND	ND	ND	ND	ND	ND	ND	.4	.01
SE#	ND	ND	ND	6.	ND	ND	ND	2.	.03
SI	ND	500.	4600.	6800.	ND	3000.	200.	100.	2.
AG#	ND	ND	ND	20.	ND	7.	ND	1.	.06
NA	1100.	5000.	1000.	5300.	ND	5400.	2100.	500.	6.
SR	ND	ND	130.	34.	ND	11.	ND	1.	.03
S	2400.	50.	106000.	10600.	NA	NA	NA	50.	
TL#	ND	ND	ND	ND	ND	ND	ND	60.	3.
TI	ND	ND	47.	1230.	ND	368.	21.	3.	.03
W	ND	ND	ND	350.	ND	120.	ND	10.	.5
V	ND	ND	2.	11.	ND	5.	ND	2.	.1
Y	ND	ND	ND	ND	ND	ND	ND	2.	.08
ZN#	40.	20.	100.	9520.	170.	3120.	510.	10.	.2
ZR	ND	ND	9.	36.	ND	18.	ND	1.	.04

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TABLE 4 ELEMENTAL CONSTITUENTS ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATIONS IN MG/KG WET WEIGHT

DRUM NO.	D20	D20	D25	D22	D23	D26	D27		
TAG NO.	N5810	N5810	N5814	N5819	N5820	N5824	N5827		
PHASE	SOLID	NONAQUEOUS	NONAQUEOUS	WATER MISC.	WATER MISC.	WATER MISC.	WATER MISC.		
ELEMENT	VALUE	VALUE	VALUE	VALUE *	VALUE *	VALUE	VALUE	LOD	LOD *
AL	4200.	ND	ND	3.	ND	ND	ND	100.	1.
SB*	20.	2.	ND	ND	.07	ND	ND	1.	.04
AS*	297.	8.	ND	ND	ND	ND	ND	1.	.02
BA	1250.	30.	ND	ND	ND	ND	ND	20.	.4
BE*	ND	ND	ND	.01	ND	ND	ND	1.	.01
B	ND	ND	ND	ND	ND	ND	ND	40.	1.
CD*	148.	5.	ND	2.96	ND	ND	ND	1.	.02
CA	10000.	700.	ND	404.	12.4	ND	ND	100.	.1
C	NA	NA	NA	NA	NA	NA	NA	1000.	
CR*	514.	28.	ND	.9	ND	ND	ND	4.	.1
CO	228.	16.	ND	1.85	.08	ND	7.	4.	.02
CU*	1350.	34.	387.	.8	ND	ND	ND	3.	.5
FE	15300.	700.	160.	6480.	448.	60.	10.	10.	.2
H	NA	NA	NA	NA	NA	NA	NA	2000.	
LA	ND	ND	ND	.3	ND	ND	ND	3.	.1
PB*	11100.	400.	ND	1.24	.3	ND	ND	10.	.01
MG	1300.	130.	ND	13.7	2.3	ND	90.	40.	.2
MN	342.	14.	9.	72.1	8.79	11.	ND	2.	.006
HG*	ND	ND	ND	ND	ND	ND	ND	.8	.8
MO	62.	ND	ND	ND	ND	ND	ND	5.	.4
NI*	52.	5.	ND	12.	ND	ND	ND	4.	.2
N	NA	NA	NA	NA	NA	NA	NA	2000.	
K	NA	NA	NA	32.9	2.6	NA	NA		.2
P	1070.	NA	ND	NA	NA	ND	ND	60.	
SC	ND	ND	ND	ND	ND	ND	ND	.4	.01
SE*	4.	ND	ND	.49	.04	ND	ND	2.	.03
SI	8300.	100.	ND	16.	ND	ND	ND	100.	2.
AG*	16.	ND	ND	ND	ND	ND	ND	1.	.06
NA	4700.	5400.	ND	1700.	8.	ND	ND	500.	6.
SR	32.	ND	ND	.47	.03	ND	ND	1.	.03
S	9430.	NA	ND	120.	NA	70.	ND	50.	
TL*	ND	ND	ND	ND	ND	ND	ND	60.	3.
TI	1040.	3.	171.	ND	ND	ND	ND	3.	.03
W	290.	ND	ND	5.	ND	ND	ND	10.	.5
V	12.	ND	ND	ND	ND	ND	ND	2.	.1
Y	ND	ND	ND	ND	ND	ND	ND	2.	.08
ZN*	8200.	280.	70.	357.	ND	180.	ND	10.	.2
ZR	36.	ND	ND	1.42	.13	ND	ND	1.	.04

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TABLE 4 ELEMENTAL CONSTITUENTS ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATIONS IN MG/KG WET WEIGHT

DRUM NO.	T130	T130	D10	D10	D37	D37	D38		
TAG NO.	N5834	N5834	N5835	N5835	N5841	N5841	N5845		
PHASE	WATER MISC.	NONAQUEOUS	SOLID	NONAQUEOUS	WATER MISC.	SOLID	WATER MISC.		
ELEMENT	VALUE	VALUE	VALUE	VALUE	VALUE *	VALUE	VALUE	LOD	LOD *
AL	100.	ND	800.	ND	499.	6900.	ND	100.	1.
SB*	ND	ND	6.	2.	ND	12.	ND	1.	.04
AS*	20.	ND	1.	ND	ND	6.	ND	1.	.02
BA	ND	ND	ND	ND	ND	ND	ND	20.	.4
BE*	2.	ND	ND	ND	ND	ND	ND	1.	.01
B	ND	ND	ND	ND	ND	ND	ND	40.	1.
CD*	ND	ND	6.	ND	.22	2.	ND	1.	.02
CA	ND	ND	200.	ND	16.	700.	ND	100.	.1
C	530000.	796000.	321000.	461000.	NA	NA	NA	1000.	
CR*	53.	ND	157.	ND	549.	56400.	ND	4.	.1
CO	ND	ND	124.	13.	ND	ND	ND	4.	.02
CU*	3.	ND	ND	ND	6.8	244.	59.	3.	.5
FE	840.	ND	4790.	190.	7.3	164000.	20.	10.	.2
H	87000.	113000.	66000.	74000.	NA	NA	NA	2000.	
LA	ND	ND	ND	ND	ND	8.	ND	3.	.1
PB*	ND	ND	750.	ND	ND	1090.	ND	10.	.01
MG	ND	ND	3570.	ND	21.3	2030.	ND	40.	.2
MN	6.	ND	15.	ND	62.	425.	ND	2.	.006
HG*	ND	ND	NA	ND	ND	NA	NA	.8	.8
MO	ND	ND	5.	ND	ND	ND	ND	5.	.4
NI*	13.	ND	18.	ND	2.8	26.	ND	4.	.2
N	66000.	19000.	43000.	21000.	NA	NA	NA	2000.	
K	NA	NA	NA	NA	4.8	NA	NA		.2
P	ND	ND	ND	ND	NA	180.	ND	60.	
SC	ND	ND	ND	ND	ND	8.3	ND	.4	.01
SE*	ND	ND	ND	ND	.05	ND	ND	2.	.03
SI	ND	ND	9000.	400.	40.	1700.	ND	100.	2.
AG*	ND	ND	ND	ND	ND	3.	ND	1.	.06
NA	ND	ND	ND	ND	157.	1600.	ND	500.	6.
SR	ND	ND	ND	ND	.37	58.	ND	1.	.03
S	1070.	ND	80.	ND	NA	820.	ND	50.	
TL*	ND	ND	ND	ND	ND	ND	ND	60.	3.
TI	ND	ND	8340.	ND	.06	38.	ND	3.	.03
W	ND	ND	ND	ND	.6	13100.	ND	10.	.5
V	2.	ND	ND	ND	.2	28.	ND	2.	.1
Y	ND	ND	ND	ND	ND	ND	ND	2.	.08
ZN*	ND	ND	ND	ND	52.5	280.	ND	10.	.2
ZR	ND	ND	ND	ND	.05	69.	ND	1.	.04

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TABLE 4 ELEMENTAL CONSTITUENTS ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATIONS IN MG/KG WET WEIGHT

DRUM NO.	D38	D38	D38	D38	D38	D38	D38		
TAG NO.	N5845	N5845	N5846	N5846	N5847	N5847	N5847		
PHASE	SOLID	NONAQUEOUS	WATER MISC.	NONAQUEOUS	WATER MISC.	SOLID	NONAQUEOUS		
ELEMENT	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	VALUE	LOD	LOD #
AL	3000.	800.	ND	3400.	ND	3500.	200.	100.	1.
SB*	60.	11.	ND	51.	ND	87.	4.	1.	.04
AS*	1.	ND	ND	ND	ND	ND	ND	1.	.02
BA	1710.	330.	ND	1680.	ND	1590.	60.	20.	.4
BE*	ND	ND	ND	ND	ND	ND	ND	1.	.01
B	ND	ND	ND	ND	ND	ND	ND	40.	1.
CD*	166.	31.	ND	339.	ND	117.	5.	1.	.02
CA	1900.	500.	ND	1900.	ND	2300.	ND	100.	.1
C	NA	NA	NA	NA	529000.	284000.	322000.	1000.	
CR*	16400.	3950.	6.	18700.	ND	29500.	1100.	4.	.1
CO	77.	ND	ND	98.	ND	99.	ND	4.	.02
CU*	2070.	754.	64.	2170.	59.	2030.	319.	3.	.5
FE	4830.	1560.	ND	4990.	20.	5370.	620.	10.	.2
H	NA	NA	NA	NA	109000.	38000.	46000.	2000.	
LA	ND	ND	ND	ND	ND	ND	ND	3.	.1
PB*	85000.	18800.	ND	115000.	ND	136000.	5770.	10.	.01
MG	160.	50.	ND	180.	ND	240.	ND	40.	.2
MN	13.	2.	ND	10.	ND	21.	ND	2.	.006
HG*	NA	ND	ND	ND	ND	NA	NA	.8	.8
MO	5360.	2520.	ND	4820.	ND	4590.	1630.	5.	.4
NI*	4.	ND	ND	7.	ND	4.	ND	4.	.2
N	NA	NA	NA	NA	11000.	22000.	21000.	2000.	
K	NA	NA	NA	NA	NA	NA	NA		.2
P	NA	NA	NA	NA	NA	630.	ND	60.	
SC	ND	ND	ND	ND	ND	ND	ND	.4	.01
SE*	7.	3.	ND	ND	ND	7.	ND	2.	.03
SI	1400.	700.	ND	1400.	ND	1600.	500.	100.	2.
AG*	ND	ND	ND	ND	ND	ND	ND	1.	.06
NA	ND	ND	ND	ND	ND	ND	ND	500.	6.
SR	201.	58.	ND	205.	ND	211.	12.	1.	.03
S	NA	NA	NA	NA	NA	4060.	450.	50.	
TL*	ND	ND	ND	ND	ND	ND	ND	60.	3.
TI	40400.	12600.	ND	49500.	ND	50700.	4260.	3.	.03
W	ND	ND	ND	ND	ND	ND	ND	10.	.5
V	2.	ND	ND	12.	ND	11.	ND	2.	.1
Y	13.	ND	ND	21.	ND	19.	ND	2.	.08
ZN*	790.	220.	ND	840.	ND	890.	80.	10.	.2
ZR	14.	ND	ND	14.	ND	16.	ND	1.	.04

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TABLE 4 ELEMENTAL CONSTITUENTS ANALYSIS
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATIONS IN MG/KG WET WEIGHT

DRUM NO.	E9	D36	D36	D30					
TAG NO.	N5864	N5866	N5866	N5881					
PHASE	SOLID	SOLID	NONAQUEOUS	WATER MISC.					
ELEMENT	VALUE	VALUE	VALUE	VALUE *	VALUE	VALUE	VALUE	LOD	LOD *
AL	3600.	1100.	100.	ND				100.	1.
SB*	29.	200.	3.	ND				1.	.04
AS*	14.	4.	ND	ND				1.	.02
BA	80.	2120.	ND	ND				20.	.4
BE*	ND	ND	ND	ND				1.	.01
B	90.	ND	ND	ND				40.	1.
CD*	88.	21.	ND	ND				1.	.02
CA	158000.	4300.	ND	3.5				100.	.1
C	55000.	NA	375000.	NA				1000.	
CR*	1250.	42.	ND	ND				4.	.1
CO	16.	ND	ND	ND				4.	.02
CU*	843.	59.	ND	ND				3.	.5
FE	40500.	33300.	60.	5.4				10.	.2
H	NA	NA	38000.	NA				2000.	
LA	ND	ND	ND	ND				3.	.1
PB*	4470.	1750.	20.	.08				10.	.01
MG	2370.	770.	ND	.9				40.	.2
MN	961.	150.	2.	.068				2.	.006
HG*	ND	NA	ND	ND				.8	.8
MO	33.	ND	ND	ND				5.	.4
NI*	739.	18.	ND	ND				4.	.2
N	2000.	NA	6000.	NA				2000.	
K	NA	NA	NA	1.					.2
P	600.	110.	ND	NA				60.	
SC	.4	ND	ND	ND				.4	.01
SE*	5.	21.	3.	ND				2.	.03
SI	12300.	106000.	1400.	ND				100.	2.
AG*	5.	7.	ND	ND				1.	.06
NA	1500.	ND	ND	11.				500.	6.
SR	88.	22.	ND	ND				1.	.03
S	40000.	640.	110.	NA				50.	
TL*	ND	ND	ND	ND				60.	3.
TI	437.	12100.	ND	ND				3.	.03
W	80.	50.	ND	ND				10.	.5
V	14.	ND	ND	ND				2.	.1
Y	ND	ND	ND	ND				2.	.08
ZN*	24200.	2320.	30.	ND				10.	.2
ZR	69.	23.	ND	ND				1.	.04

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TABLE 5 GAS CHROMATOGRAPHABLE ORGANICS ANALYSIS
WESTERN PROCESSING INC., KENT WASHINGTON
PROJECT A15 #2

TAG NO.	SAMPLE PHASE	COMPOUND	AMOUNT (MG/KG)	DETECTION LIMIT (MG/KG)
N5749	WHOLE	N-NITROSODIPHENYLAMINE	1700	600
N5750	WHOLE	N-NITROSODIPHENYLAMINE	3000	600
		NONADECANONE (C19)	PBL	500
		HYDROCARBONS	T	-
N5751	WHOLE	N-NITROSODIPHENYLAMINE	2400	600
		NONADECANONE (C19)	PBL	500
		HYDROCARBONS	T	-
N5753	WHOLE	STYRENE	31,000	1000
		ACETONE	760,000	30,000
		DIMETHYLPHTHALATE	PBL	900
N5758	WHOLE	TETRACHLOROETHENE	7000	2000
		CHLOROFORM	14,000	1000
		ETHYLBENZENE	15,000	2000
		XYLENE	52,000	2000
		METHYLENE CHLORIDE	41,000	2000
		TOLUENE	49,000	1000
		1,1,1-TRICHLOROETHANE	240,000	5000
		TRICHLOROETHENE	300,000	10,000
		TRICHLOROTRIFLUORO-ETHANE	T	-
		PHENOL	5000	2000
		1,2,4-TRIMETHYLBENZENE	PBL	2000
		HYDROCARBONS (C9-C12), SATURATED	4000	1000
		4-METHYL-2-PENTANONE	PBL	4000
		BUTYL ACETATE	PBL	2000
		HYDROCARBONS	T	-
		ALKYLBENZENE (C9)	T	-
		ISOPROPANOL	53,000	3000
N5775	WHOLE	3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZOLIDINONE	T	-
		XYLENE	PBL	1000
		DIHYDRO-5-METHYL-3(2H)FURANONE	T	-
		BUTYLMETHYLCARBAMIC ACID, METHYL ESTER	T	-
N5795	WATER MISC	PHENOL	PBL	5000
		4-METHYL-2-PENTANONE	PBL	10,000
		1,3-DICHLORO-2-PROPANOL	PBL	5000
		1,2-BUTANEDIOL	T	-
		1-CHLORO-2-BUTANOL	T	-
	NONAQUEOUS	CHLOROBENZENE	1700	200
		1,2-DICHLOROBENZENE	450,000	50,000
		1,4-DICHLOROBENZENE	64,000	2000
		1,3-DICHLOROBENZENE	32,000	3000
		2-METHYLPHENOL	400,000	100,000
N5804	WHOLE	ACETONE	210,000	30,000
		BENZALDEHYDE	200	100
		PHTHALIC ACID(ANHYDRIDE)	500	200
		2-METHYL-2-PROPENOIC ACID	T	-
		PHENYLETHYLENE GLYCOL	T	-
		PHENYLALKENYL KETONE	T	-
N5808	NONAQUEOUS	ACETONE	3000	3000
		XYLENE	14,000	1000
		ETHYLBENZENE	5000	1000
		METHYLCYCLOHEXANE	6000	1000
		CYCLOHEXANE	8000	1000
		TOLUENE	15,000	1000
		NAPHTHALENE	PBL	10,000
		PHENOL	140,000	20,000
		3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZOLIDINONE	T	-
		2-METHYLPHENOL	40,000	20,000
		3- & 4- METHYLPHENOL	110,000	20,000
		4-ETHYLPHENOL	30,000	20,000
		2,4-DIMETHYLPHENOL	PBL	20,000
		PHENANTHRENE	PBL	10,000
		M- & P-ETHYLTOLUENE	PBL	20,000
		DIMETHYLBENZALDEHYDE	T	-
		2-METHYLNAPHTHALENE	PBL	20,000
		2-ETHYLPHENOL	PBL	20,000
		BENZENE	5000	500

PBL = PRESENT BELOW LOWER LIMIT OF DETECTION.
T = TENTATIVE IDENTIFICATION BASED ON LIBRARY SPECTRAL MATCH. NO STANDARD AVAILABLE FOR CONFIRMATION.

TABLE 5 GAS CHROMATOGRAPHABLE ORGANICS ANALYSIS
WESTERN PROCESSING INC., KENT WASHINGTON
PROJECT A15 #2

TAG NO.	SAMPLE PHASE	COMPOUND	AMOUNT (MG/KG)	DETECTION LIMIT(4,6) (MG/KG)
N5834	WATER MISC	METHYLENE CHLORIDE	4000	2000
		ETHYLBENZENE	6000	1000
		XYLENE	25,000	1000
		TOLUENE	34,000	1000
		4-METHYL-2-PENTANONE	11,000	4000
		BUTYL ACETATE	3000	2000
		PROPYLBENZENE	PBL	2000
		ETHYLTOLUENE	5000	2000
		1,2,4-TRIMETHYLBENZENE	3000	2000
		1,2,3-TRIMETHYLBENZENE	2000	2000
		1,3,5-TRIMETHYLBENZENE	PBL	2000
		ETHYLENE GLYCOL MONO-ETHYL ETHER ACETATE	14,000	4000
		1,1-DIOXIDETETRAHYDRO-THIOPHENE	T	-
		3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZOLIDINONE	T	-
		1-PIPERIDINONE CARBOXYLIC ACID, ETHYL ESTER	T	-
		ETHYLXYLENE	T	-
	NONAQUEOUS	ETHYLBENZENE	30,000	10,000
		XYLENE	140,000	10,000
		TOLUENE	140,000	10,000
		PROPYLBENZENE	PBL	10,000
		4-METHYL-2-PENTANONE	20,000	20,000
		HYDROCARBONS (C9-C13), SATURATED	40,000	5000
		ETHYLTOLUENE	40,000	10,000
		1,3,5-TRIMETHYLBENZENE	PBL	10,000
		1,2,4-TRIMETHYLBENZENE	30,000	10,000
		1,2,3-TRIMETHYLBENZENE	20,000	10,000
		ETHYLENE GLYCOL MONO-ETHYL ETHER ACETATE	PBL	20,000
		PROPYLTOLUENE	T	-
		HYDROCARBON	T	-
		ETHYLXYLENE	T	-
		BUTYL ACETATE	PBL	10,000
		ISOBUTYL ACETATE	20,000	10,000
N5845	WATER MISC	METHANOL	11,000	3000
		ETHANOL	330,000	30,000
		ISO-PROPANOL	5000	3000
		N-PROPANOL	150,000	10,000
		XYLENE	28,000	1000
		ETHYLBENZENE	3000	1000
		ETHYL ACETATE	20,000	10,000
		N-PROPYL ACETATE	110,000	10,000
		1,2-DICHLOROBENZENE	88,000	5000
		1,4-DICHLOROBENZENE	12,000	5000
		1,3-DICHLOROBENZENE	PBL	7000
		ETHYLENE GLYCOL MONO-BUTYL ETHER	120,000	10,000
	NONAQUEOUS	ETHANOL	52,000	6000
		N-PROPANOL	28,000	3000
N5846	WATER MISC	METHANOL	10,000	3000
		ETHANOL	320,000	30,000
		ISO-PROPANOL	6000	3000
		N-PROPANOL	140,000	6000
		XYLENE	31,000	1000
		ETHYLBENZENE	4000	1000
		ETHYL ACETATE	20,000	10,000
		N-PROPYL ACETATE	120,000	10,000
		1,2-DICHLOROBENZENE	65,000	5000
		1,4-DICHLOROBENZENE	8000	5000
		1,3-DICHLOROBENZENE	PBL	7000
		ETHYLENE GLYCOL MONO-BUTYL ETHER	80,000	10,000
N5847	WATER MISC	METHANOL	9000	3000
		ETHANOL	300,000	30,000
		ISO-PROPANOL	6000	3000
		N-PROPANOL	140,000	10,000
		XYLENE	31,000	1000
		ETHYLBENZENE	4000	1000
		ETHYL ACETATE	20,000	10,000
		N-PROPYL ACETATE	120,000	10,000
		1,2-DICHLOROBENZENE	66,000	5000
		1,4-DICHLOROBENZENE	9000	5000
		1,3-DICHLOROBENZENE	PBL	7000
		ETHYLENE GLYCOL MONO-BUTYL ETHER	80,000	10,000

PBL = PRESENT BELOW LOWER LIMIT OF DETECTION.
T = TENTATIVE IDENTIFICATION BASED ON LIBRARY SPECTRAL MATCH.
NO STANDARD AVAILABLE FOR CONFIRMATION.

TABLE 5 GAS CHROMATOGRAPHABLE ORGANICS ANALYSIS
WESTERN PROCESSING INC., KENT WASHINGTON
PROJECT A15 #2

TAG NO.	SAMPLE PHASE	COMPOUND	AMOUNT (MG/KG)	DETECTION LIMIT (MG/KG)
N5809	WHOLE	ACETONE	4000	3000
		XYLENE	410	50
		BENZENE	100	50
		CYCLOHEXANE	110	50
		METHYLCYCLOHEXANE	120	50
		ETHYLBENZENE	130	50
		TOLUENE	350	50
		NAPHTHALENE	PBL	10,000
		PHENOL	100,000	20,000
		3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZOLIDINONE	T	-
		2-METHYLPHENOL	20,000	20,000
		3- & 4-METHYLPHENOL	70,000	20,000
		4-ETHYLPHENOL	PBL	20,000
N5810	NONAQUEOUS	ACETONE	5000	3000
		XYLENE	3400	100
		ETHYLBENZENE	1200	100
		METHYLCYCLOHEXANE	1600	100
		CYCLOHEXANE	1700	100
		TOLUENE	2400	100
		NAPHTHALENE	4000	2000
		PHENOL	130,000	20,000
		3-(2-HYDROXYPROPYL)-5-METHYL-2-OXAZOLIDINONE	T	-
		2-METHYLPHENOL	25,000	5000
		3- & 4-METHYLPHENOL	78,000	5000
		4-ETHYLPHENOL	25,000	5000
		2,4-DIMETHYLPHENOL	14,000	4000
		PHENANTHRENE	PBL	2000
		1,2,4-TRIMETHYLBENZENE	PBL	5000
		2-METHYLNAPHTHALENE	PBL	5000
		M- & P-ETHYLTOLUENE	PBL	5000
		BENZENE	900	100
N5835	NONAQUEOUS	STYRENE	77,000	1000
		ACETONE	550,000	30,000
		DIMETHYLPHTHALATE	PBL	2000
		BENZALDEHYDE	PBL	2000
N5814	WHOLE	TOLUENE	440,000	10,000
		4-METHYL-2-PENTANONE	300,000	20,000
		ETHYLENE GLYCOL MONO-ETHYL ETHER ACETATE	30,000	20,000
		XYLENE	30,000	10,000
		ETHYLBENZENE	PBL	10,000
		ALKANOIC ACID (C4),-ALKYL ESTER (C4)	T	-
		ETHANOL	16,000	3000
N5819	WHOLE	METHYL ETHYL KETONE	8000	1000
		PHENOL	PBL	100
		1,3-DICHLORO-2-PROPANOL	100	100
		ETHYLENE GLYCOL MONO-ETHYL ETHER ACETATE	PNQ	
		1-CHLORO-2-BUTANOL	T	-
		1,2-BUTANEDIOL	T	-
N5824	WHOLE	CYCLOHEXANONE	PBL	100
		ETHYLENE GLYCOL MONO-ETHYL ETHER ACETATE	4000	200
		1-METHYL-2-PYRROLIDIN-ONE	200	100
		PIPERIDINONE	T	-
		4,9-DIMETHYLNAPHTHO-[2,3,B]-THIOPHENE	T	-
N5827	WHOLE	ACETONE	330,000	30,000
		STYRENE	500	100
		4-METHYL-2-PENTANONE	PBL	200
		BENZALDEHYDE	PBL	100
N5841	WATER MISC	CYCLOHEXANONE	300	100
N5866	NONAQUEOUS	TRICHLOROETHENE	820,000	20,000
		TOLUENE	2000	1000
		TETRACHLOROETHENE	4000	1000
		ETHYLBENZENE	2000	1000
		XYLENE	7000	1000
		1,3-DICHLORO-2-PROPANOL	PBL	1000
		AROCLOR 1254	70	10

PBL = PRESENT BELOW LOWER LIMIT OF DETECTION.
T = TENTATIVE IDENTIFICATION BASED ON LIBRARY SPECTRAL MATCH.
NO STANDARD AVAILABLE FOR CONFIRMATION.

TABLE 6 GENERAL CONSTITUENTS PRECISION AND ACCURACY REPORT
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

CONCENTRATIONS IN MG/KG WET WEIGHT UNLESS OTHERWISE NOTED

	PRECISION EVALUATION						ACCURACY EVALUATION								
	MEASUREMENT LEVEL TRIPLICATE DATA			ANALYSIS LEVEL DUPLICATE DATA			MEASUREMENT LEVEL SPIKE RECOVERY DATA			ANALYSIS LEVEL SPIKE RECOVERY DATA			ANALYSIS LEVEL CONTROL SAMPLE DATA		
PARAMETER	SAMPLE NUMBER	AVERAGE	%RSD	SAMPLE NUMBER	AVERAGE	%RD	SAMPLE NUMBER	SPIKE LEVEL	%REC	SAMPLE NUMBER	SPIKE LEVEL	%REC	CONTROL NUMBER	TRUE VALUE	%DEV
PH *				N5820	3.6	0.0									
ACIDITY *				N5820	0.032	25.0									
TDS1 *				N5820	0.175	5.7									
TDS2 *				N5820	0.295	3.5									
CYANIDE				N5808	1.08	54.1				N5808	100.	70.3	EPA #2	9.3	-5.0
SULFIDE				N5749	58.2	33.1				N5749	1000.	69.2			
WATER *				N5864	31.5	0.6									
BROMIDE	N5841	11.	15.7	N5750	ND		N5841	1000.	104.	N5750	10000.	102.			
CHLORIDE	N5841	210.	8.1	N5750	14.7	7.9	N5841	250.	90.	N5750	10000.	104.	882-1	8530.	1.4
FLUORIDE	N5841	1450.	6.1	N5750	ND		N5841	2000.	91.	N5750	10000.	105.	882-1	130.	-8.5
NITRATE	N5841	2190.	5.6	N5750	22.3	25.9	N5841	1500.	110.	N5750	10000.	109.	481-2	160.	1.4
NITRITE	N5841	ND		N5750	ND		N5841	500.	101.	N5750	NS				
PHOSPHATE	N5841	ND		N5750	ND		N5841	1500.	80.	N5750	10000.	108.	481-2	27.	-3.5
SULFATE	N5841	109.	3.7	N5750	29.3	15.8	N5841	1500.	99.	N5750	10000.	103.	882-1	9380.	-2.1
TOC				N5819	35000.	1.0							276-2	90.	-5.9

* = DATA REPORTED IN SAME UNITS AS TABLE 3
%RSD = PERCENT RELATIVE STANDARD DEVIATION
%RD = PERCENT RELATIVE DIFFERENCE
%REC = PERCENT RECOVERY

TABLE 7 ELEMENTAL CONSTITUENTS ANALYSIS PRECISION REPORT
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATION IN MG/KG

	MEASUREMENT DATA		ANALYSIS DATA							
DRUM NO.	D20		T144		D4		D23			
TAG NO.	N5810		N5775		N5751		N5820			
PHASE	SOLID		WATER MISCIBLE		SOLID		WATER MISCIBLE			
ELMT	AVERAGE	%RSD	AVERAGE	%RSD	AVERAGE	%RSD	AVERAGE	%RSD	AVERAGE	%RSD
AL	4270.	1.15	93.1	89.4	ND		ND			
SB	23.7*	3.93	2.75	0.68	5.8	100.4	ND			
AS	343. *	4.32	83.3	11.3	3.99	78.45	ND			
BA	1240.	0.92	ND		ND		ND			
BE	ND		ND		ND		ND			
B	32.8	86.73	ND		ND		ND			
CD	165.	8.79	ND		ND		ND			
CA	10500.	4.96	ND		129.	87.13	13.	4.82		
C	NA		536000.	0.20	NA		NA			
CR	567.	8.84	ND		ND		ND			
CO	228.	1.2	ND		ND		0.0641	18.07		
CU	1400.	2.98	12.8	25.96	ND		ND			
FE	15600.	2.39	83.9	9.9	100.	26.09	445.	0.66		
H	NA		86200.	0.77	NA		NA			
LA	ND		ND		ND		ND			
PB	11400.	2.74	ND		3860.	18.43	0.332	11.12		
MG	1290.	0.97	97.9	123.58	45.3	93.43	2.51	6.99		
MN	362.	5.31	ND		2.2	92.91	8.59	2.35		
MO	72.5	13.74	ND		ND		ND			
NI	52.8	6.3	3.57	89.68	ND		ND			
N	NA		75300.	1.76	NA		NA			
K	NA		NA		NA		2.61	1.15		
P	NA		ND		ND		NA			
SC	0.539	114.08	ND		ND		ND			
SE	4.38 *	24.94	ND		ND		ND			
SI	8360.	1.08	ND		ND		ND			
AG	18.7	12.13	ND		ND		ND			
NA	4810.	3.52	ND		ND		ND			
S	NA		468.	7.13	6580.	1.83	NA			
SR	31.5	1.59	ND		ND		0.0416	20.		
TL	ND		ND		ND		ND			
TI	1100.	4.91	ND		ND		ND			
W	292.	4.4	ND		ND		ND			
V	11.4	2.79	ND		ND		ND			
Y	ND		ND		ND		ND			
ZN	9050.	9.2	ND		25.7	17.93	ND			
ZR	40.6	11.1	ND		ND		0.128	2.77		

ND = LESS THAN LOD
%RSD = PERCENT RELATIVE STANDARD DEVIATION
* = VALUE FOR SAMPLE N5808 SOLID PHASE FOR DRUM D20.

TABLE 8 ELEMENTAL CONSTITUENTS SPIKED SAMPLE ACCURACY REPORT
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATION IN MG/KG

	MEASUREMENT DATA				ANALYSIS DATA							
	SAMP TAG	SAMPLE VALUE	SPIKE LEVEL	% REC	SAMP TAG	SAMPLE VALUE	SPIKE LEVEL	% REC	SAMP TAG	SAMPLE VALUE	SPIKE LEVEL	% REC
AL	5810	4220.	8000.	104.8	5775	119.	1270.	86.	5820	ND	NS	
SB	5810	19.5	80.	97.6	5775	2.74	1270.	92.6	5820	ND	200.	103.0
AS	5810	317.	80.	106.9	5775	77.2	1270.	92.5	5820	ND	200.	73.
BA	5810	1250.	800.	100.6	5775	ND	1270.	91.6	5820	ND	2000.	101.5
BE	5810	ND	800.	108.2	5775	ND	1270.	95.2	5820	ND	2000.	108.1
B	5810	ND	800.	107.1	5775	ND	1270.	88.1	5820	ND	NS	
CD	5810	148.	800.	101.3	5775	ND	1270.	92.7	5820	ND	2000.	105.7
CA	5810	10000.	80000.	109.3	5775	ND	1270.	104.1	5820	12.4	NS	
CR	5810	514.	800.	109.8	5775	ND	1270.	96.1	5820	ND	2000.	96.8
CO	5810	228.	800.	98.3	5775	ND	1270.	91.4	5820	0.076	NS	
CU	5810	1350.	800.	102.9	5775	10.6	1270.	92.	5820	ND	2000.	103.
FE	5810	15300.	8000.	106.8	5775	77.1	1270.	95.6	5820	448.	NS	
LA	5810	ND	800.	99.9	5775	ND	NS		5820	ND	NS	
PB	5810	11100.	16000.	106.1	5775	ND	1270.	95.5	5820	0.295	2000.	84.5
MG	5810	1300.	80000.	101.2	5775	ND	1270.	110.2	5820	2.31	NS	
MN	5810	342.	800.	100.3	5775	ND	1270.	108.8	5820	8.79	NS	
HG					5750	ND	250.	74.4				
MO	5810	62.5	800.	102.2	5775	ND	1270.	83.8	5820	ND	NS	
NI	5810	52.1	800.	104.8	5775	ND	NS		5820	ND	2000.	103.5
K									5820	2.59	NS	
SC	5810	ND	800.	102.5	5775	ND	NS		5820	ND	NS	
SE	5810	4.2	80.	101.8	5775	ND	1270.	89.8	5820	ND	200.	104.5
SI	5810	8320.	8000.	103.3	5775	ND	1270.	101.1	5820	ND	NS	
AG	5810	16.4	800.	81.5	5775	ND	NS		5820	ND	NS	
NA	5810	4680.	80000.	101.4	5775	ND	1270.	76.8	5820	7.68	NS	
SR	5810	31.6	800.	101.9	5775	ND	1270.	89.3	5820	0.034	NS	
TL	5810	ND	8000.	101.3	5775	ND	1270.	83.8	5820	ND	2000.	98.5
TI	5810	1040.	800.	113.4	5775	ND	1270.	88.4	5820	ND	NS	
W	5810	292.	8000.	104.4	5775	ND	1270.	100.7	5820	ND	NS	
V	5810	11.7	800.	105.6	5775	ND	1270.	96.1	5820	ND	NS	
Y	5810	ND	800.	97.6	5775	ND	NS		5820	ND	NS	
ZN	5810	8200.	16000.	103.6	5775	ND	1270.	96.1	5820	ND	2000.	107.3
ZR	5810	36.1	800.	104.7	5775	ND	1270.	77.6	5820	0.127	NS	

ND = LESS THAN LIMIT OF DETECTION
NS = NOT SPIKED
%REC = PERCENT RECOVERY OF SPIKE

TABLE 9 ELEMENTAL CONSTITUENTS CONTROL SAMPLE ACCURACY REPORT
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15 #2

CONCENTRATION IN MG/KG

KOH FUSION ICP

	NBS SRM 1645 RIVER SEDIMENT			CONOSTAN 900 MG/KG OIL STD. & USGS ~500 MG/KG GLASS STD.		
	FOUND	ACTUAL	%D	FOUND	ACTUAL	%D
AL	23600.	22600.	4.4	1020.	900.	13.4
SB				429.	470.	-8.7
AS	67.6	66.	2.5			
BA	343.	340.	0.8	920.	900.	2.2
BE				488.	500.	-2.5
B				856.	900.	-4.9
CD	7.63	10.	-23.7	921.	900.	2.3
CA	27700.	29000.	-4.5	951.	900.	5.6
C						
CR	26900.	29600.	-9.1	971.	900.	7.9
CO				398.	450.	-11.5
CU	112.	109.	2.7	833.	900.	-7.4
FE	99000.	113000.	-12.4	956.	900.	6.2
H						
LA				376.	550.	-31.6
PB	624.	714.	-12.6	893.	900.	-0.8
MG	6620.	7400.	-10.6	896.	900.	-0.5
MN	705.	785.	-10.2	932.	900.	3.5
HG						
MO				819.	900.	-9.0
NI	42.6	46.	-7.5	868.	900.	-3.5
N						
K						
P						
SC	1.72	2.	-14.			
SE						
SI	220000.	238000.	-7.5	838.	900.	-6.9
AG						
NA	5700.	5400.	5.6			
S						
SR	834.	820.	1.7	478.	500.	-4.5
TL						
TI	630.	640.	-1.6	880.	900.	-2.2
W				476.	420.	13.4
V	24.2	24.	0.9	842.	900.	-6.4
Y				345.	490.	-29.7
ZN	1510.	1720.	-12.	935.	900.	-6.4
ZR	81.6	77.	5.9	477.	480.	-0.6

CONTROL ID	METHOD	FOUND	ACTUAL	%D
EPA 475 #3	DILUTION ICP	7.47	7.	6.7
EPA 475 #3	DILUTION ICP	2.10	2.	5.0
EPA 475 #3	DILUTION ICP	6.72	7.5	-10.4
EPA 475 #3	DILUTION ICP	0.421	0.5	-15.8
ACETANILIDE	COMBUST DTC	711700.	710900.	0.1
EPA 475 #3	DILUTION ICP	1.23	1.5	-17.7
EPA 475 #3	DILUTION ICP	5.09	5.	1.7
EPA 475 #3	DILUTION ICP	2.38	2.5	-4.7
EPA 475 #3	DILUTION ICP	6.23	6.	3.8
ACETANALIDE	COMBUST DTC	66800.	67100.	-0.4
EPA 475 #3	DILUTION ICP	2.55	2.5	1.9
EPA 475 #3	DILUTION ICP	3.3	3.5	5.6
EPA SLUDGE	ACID DIGEST	14.7	16.	-8.1
EPA 475 #3	DILUTION ICP	2.4	2.5	-4.2
ACETANALIDE	COMBUST DTC	103800.	103600.	0.2
EPA 475 #3	DILUTION ICP	0.35	0.40	-12.5
EPA 475 #3	DILUTION ICP	7.32	7.5	-2.4
EPA 475 #3	DILUTION ICP	1.82	2.	-9.2

ND = LESS THAN LOD
%DEV = PERCENT DEVIATION

TABLE 10 GAS CHROMATOGRAPHABLE ORGANIC ANALYSIS PRECISION REPORT
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

CONCENTRATIONS IN MG/KG

TAG NO.	PHASE	COMPOUND	AVERAGE VALUE	%RSD	%RD
N5814	NONAQUEOUS	TOLUENE	440000.		6.9
N5819	WATER MISC	PHENOL	PBL		
		1,3-DICHLORO-2-PROPANOL	100.		0.0
N5866	WATER MISC	TRICHLOROETHENE	820000.	3.5	
		AROCLOR 1254	70.	7.1	
N5845	WATER MISC	METHANOL	11000.		0.0
		ETHANOL	330000.		1.0
		ISOPROPANOL	5000.		0.0
		N-PROPANOL	150000.		1.0
N5846	WATER MISC	METHANOL	10000.		0.0
		ETHANOL	320000.		1.0
		ISOPROPANOL	6000.		18.
		N-PROPANOL	28000.		3.5
N5847	WATER MISC	METHANOL	9000.		0.0
		ETHANOL	300000.		4.4
		ISOPROPANOL	6000.		0.0
		N-PROPANOL	140000.		6.3

%RSD = PERCENT RELATIVE STANDARD DEVIATION OF TRIPLICATE ANALYSIS
%RD = PERCENT RELATIVE DIFFERENCE OF DUPLICATE ANALYSIS

TABLE 11 GAS CHROMATOGRAPHABLE ORGANIC ANALYSIS SPIKED SAMPLE ACCURACY REPORT
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

CONCENTRATIONS IN MG/KG

SPIKE TYPE	TAG NO.	COMPOUND SPIKED	SPIKE LEVEL	NO. OF TIMES DETECTED **	AVERAGE % REC	STD DEV OF REC.
MEASUREMENT	ALL *	BROMOCHLOROMETHANE	> 250 ***	21	100.	4.0
MEASUREMENT	ALL *	d8-NAPHTHALENE	> 360 ***	34	90.	18.
ANALYSIS	ALL *	2-FLUOROPHENOL	600	5	78.	19.
ANALYSIS	ALL *	d6-PHENOL	100	3	77.	5.0
ANALYSIS	ALL *	d5-NTIROBENZENE	600	7	92.	9.4
ANALYSIS	ALL *	DECAFLUOROBIPHENYL	100	3	110.	13.
ANALYSIS	ALL *	d10-PYRENE	100	5	99.	24.
ANALYSIS	N5847	METHANOL	50000	NA	96.	
ANALYSIS	N5847	ETHANOL	50000	NA	72.	
ANALYSIS	N5847	ISOPROPANOL	50000	NA	84.	
ANALYSIS	N5847	N-PROPANOL	50000	NA	78.	
ANALYSIS	N5847	TERT-BUTANOL	50000	NA	80.	
ANALYSIS	N5847	SEC-BUTANOL	50000	NA	86.	
ANALYSIS	N5847	N-BUTANOL	50000	NA	78.	
ANALYSIS	N5820	AROCLOR 1254	50	NA	57.	
ANALYSIS	N5866	AROCLOR 1254	100	NA	81.	

* = ALL PREPARATIONS ARE SPIKED PRIOR TO ANALYSIS
** = MANY TIMES OTHER CONSTITUENTS REQUIRE DILUTION OF THE PREPARATION FOR QUANTITATION THUS NOT ALLOWING DETECTION OF THESE COMPOUNDS IN ALL PREPARATIONS
*** = 50 UG/L AND 36 MG/L, RESPECTIVELY, ARE ADDED TO THE SOLUTION INJECTED
NA = NOT APPLICABLE
% REC = PERCENT RECOVERY OF SPIKE
STD DEV = STANDARD DEVIATION OF THE RECOVERY

TABLE 12 ELEMENTAL CONSTITUENTS ANALYSIS FIELD TRIPLICATE PRECISION REPORT
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

CONCENTRATION IN MG/KG

DRUM NO.	D4		D20		D38	
	100% PASTE		94% LIQUID 6% SOLID		93% WATER MISC. LIQ. 6% NONAQUEOUS LIQ. 1% SOLID	
ELMT	AVERAGE	%RSD	AVERAGE	%RSD	AVERAGE	%RSD
AL	ND		218.	8.68	112.	44.9
SB	NC		2.59	10.5	1.95	30.3
AS	NC		22.1	5.05	ND	
BA	ND		93.7	9.29	53.0	50.9
BE	ND		ND		ND	
B	ND		ND		ND	
CD	NC		11.8	2.72	7.81	102.
CA	NC		1030.	11.7	65.0	40.4
CR	ND		49.6	6.00	676.	37.1
CO	ND		28.0	4.32	2.55	83.3
CU	ND		100.	5.71	136.	21.9
FE	453.	107.7	2010.	25.6	194.	25.3
LA	ND		ND		ND	
PB	4590.	34.4	936.	4.54	4100.	44.1
MG	NC		128.	46.5	6.30	37.2
MN	8.3	68.5	36.7	15.3	0.400	29.2
MO	NC		2.82	46.2	215.	17.0
NI	ND		4.04	74.5	0.160	105.
K	NA		NA		NA	
P	NA		NA		NA	
SC	ND		ND		ND	
SE	NC		0.230	49.4	0.140	100.
SI	NC		438.	14.3	63.	10.3
AG	ND		0.83	42.9	ND	
NA	ND		2670.	95.2	ND	
S	NA		NA		NA	
SR	ND		1.47	43.9	7.06	40.7
TL	ND		ND		ND	
TI	ND		58.0	25.0	1660.	42.4
W	ND		14.6	43.2	ND	
V	NC		0.537	30.6	0.28	105.
Y	ND		ND		0.52	91.5
ZN	53.3	54.2	647.	10.1	29.0	38.8
ZR	ND		1.74	26.0	0.39	73.3

ND = LESS THAN LOD
%RSD = PERCENT RELATIVE STANDARD DEVIATION
NC = NOT CALCULATED BECAUSE AT LEAST ONE OF THE THREE VALUES WAS NOT DETECTABLE.

TABLE 13 GAS CHROMATOGRAPHABLE ORGANIC ANALYSIS FIELD TRIPLICATE PRECISION REPORT
WESTERN PROCESSING INC., KENT, WASHINGTON
PROJECT A15

CONCENTRATIONS IN MG/KG

DRUM NO.	PHASE	COMPOUND	AVERAGE VALUE	%RSD
D4	WHOLE	N-NTIROSODIPHENYLAMINE	2400.	27.
		NONDECANONE	PBL *	
		HYDROCARBONS	T *	
D20	NONAQUEOUS	XYLENE	5900.	120.
		ETHYLBENZENE	2100.	120.
		BENZENE	2000.	130.
		METHYLCYCLOHEXANE	2600.	120.
		CYLCOHEXANE	3300.	130.
		TOLUENE	5900.	130.
		ACETONE	4000.	20.
		PHENOL	120000.	17.
		2-METHYLPHENOL	27000.	27.
		3- & 4-METHYLPHENOL	86000.	25.
		4-ETHYLPHENOL	28000. **	18. **
		2-METHYLNAPHTHALENE	PBL *	
		M- & P-ETHYLTOLUENE	PBL *	
		3-(HYDROXYPROPYL)-5-METHYL-2-OXA-ZOLIDINONE	T	
D38	WATER MISC	XYLENE	30000.	5.8
		ETHYLBENZENE	4000.	15.
		ETHYL ACETATE	20000.	0.0
		N-PROPYL ACETATE	120000.	4.9
		1,2-DICHLOROBENZENE	73000.	18.
		1,4-DICHLOROBENZENE	9700.	21.
		1,3-DICHLOROBENZENE	PBL	
		ETHYLENE GLYCOL MONOBUTYL ETHER	96000.	22.
		4-METHYL-2-PENTANONE	PBL	
		METHANOL	10000.	3.9
		ETHANOL	310000.	4.6
		ISOPROPANOL	5500.	10.
		N-PROPANOL	140000.	2.5

%RSD = PERCENT RELATIVE STANDARD DEVIATION
PBL = PRESENT BUT BELOW DETECTION LIMIT
T = TENTATIVE IDENTIFICATION
* = COMPOUND DETECTED IN ONLY TWO OF THE THREE SAMPLES
** = COMPOUND DETECTED IN ONLY TWO OF THE THREE SAMPLES AND THE %RSD IS EQUAL TO THE PERCENT RELATIVE DIFFERENCE

TABLE 14

SAMPLE ANALYSIS SCHEME
WESTERN PROCESSING, INC.
KENT, WASHINGTON
NEIC PROJECT A-15

TAG NUMBER	PHASE	IR	CHN	EDXRFS	KARL-FISCHER	FUSION ICAP	DILUTION ICAP	DILUTION IC	CH2CL2 EXTRACTION GC-FID	CH2CL2 EXTRACTION GC-MS	METHANOL EXTRACTION GC-FID	METHANOL EXTRACTION GC-MS	HEXANE EXTRACT GC-ECD
N5749	100% SOLID	X		X	X	X		X	X	X	X	X	X
N5750	100% SOLID	X		X	X	X		X	X	X	X	X	X
N5751	100% SOLID	X	X	X	X	X		X	X	X	X	X	X
N5753	100% LIQUID	X	X	X	X	X			X	X	X@	X	X
N5758	99.5% LIQUID	X	X	X	X	X			X	X	X@	X	X
	0.5% SOLID	X		X									
N5775	100% LIQUID	X	X	X	X	X			X	X	X		X
N5795	83.6% LIQUID	X		X	X	X			X	X	X	X	X
	16.4% LIQUID	X		X	X	X		X	X	X	X		X
N5804	100% LIQUID	X		X	X	X			X	X	X@	X	X
N5806	99.3% SOLID	X	X	X	X	X		X	X		X		X
	0.7% LIQUID			X	X								
N5808	94% LIQUID	X		X	X	X		X	X	X	X@	X	X
	6% SOLID	X		X		X							
N5809	93% LIQUID	X	X	X	X	X		X	X	X	X@	X	X
	7% SOLID	X	X	X		X		X					
N5810	95% LIQUID	X		X	X	X		X	X	X	X@	X	X
	5% SOLID	X		X		X		X					

IR: INFRARED SPECTROSCOPY CONSIDERED SEMI-QUANTITATIVE
CHN: CARBON, HYDROGEN & NITROGEN - COMBUSTION COLUMN SELECTIVE DIFFERENTIAL THERMAL CONDUCTIVITY
EDXRFS: ENERGY DISPERSIVE X-RAY FLUORESCENCE SPECTROSCOPY CONSIDERED SEMI-QUANTITATIVE
KARL-FISCHER: COULOMETRIC KARL-FISCHER TITRATION FOR WATER
ICAP: INDUCTIVELY COUPLED ARGON PLASMA OPTICAL EMISSION SPECTROSCOPY
IC: ION CHROMATOGRAPHY
GC-FID: GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTOR
GC-ECD: GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTOR
GC-MS: GAS CHROMATOGRAPHY - MASS SPECTROSCOPY
@ THIS PHASE WAS ALSO EXTRACTED WITH WATER AND ANALYZED FOR ALCOHOLS AND KETONES BY GC-FID.

TABLE 14

SAMPLE ANALYSIS SCHEME
WESTERN PROCESSING, INC.
KENT, WASHINGTON
NEIC PROJECT A-15

TAG NUMBER	PHASE	IR	CHN	EDXRFS	KARL-FISCHER	FUSION ICAP	DILUTION ICAP	DILUTION IC	CH2CL2 EXTRACTION GC-FID	CH2CL2 EXTRACTION GC-MS	METHANOL EXTRACTION GC-FID	METHANOL EXTRACTION GC-MS	HEXANE EXTRACT GC-ECD
N5814	99.5% LIQUID	X		X	X	X			X	X	X@	X	X
	0.5% SOLID	X		X									
N5819	98.8% LIQUID	X		X	X		X	X	X	X	X	X	X
	1.2% SOLID	X		X									
N5820	100% LIQUID	X		X	X		X	X	X		X		X
N5824	99.4% LIQUID	X		X	X	X		X	X	X	X		X
	0.6% SOLID	X		X									
N5827	99.5% LIQUID	X		X	X	X			X	X	X@	X	X
	0.5% SOLID	X		X									
N5834	55.9% LIQUID	X	X	X	X	X			X	X	X@	X	X
	44.1% LIQUID	X	X	X	X	X			X	X	X@	X	X
N5835	74.1% LIQUID	X	X	X	X	X			X	X	X@	X	X
	25.9% SOLID	X	X	X		X							
N5841	97% LIQUID	X		X	X		X	X	X	X	X		X
	3% SOLID	X		X		X							
N5845	92% LIQUID	X		X	X	X		X	X	X	X@	X	X
	7% LIQUID	X		X	X	X		X			X@		
	1% SOLID	X		X		X							
N5846	95% LIQUID	X		X	X	X		X	X	X	X@	X	X
	5% LIQUID	X		X	X	X		X					
N5847	93% LIQUID	X	X	X	X	X		X	X	X	X@	X	X
	5% LIQUID	X	X	X	X	X							
	2% SOLID	X	X	X		X							
N5864	100% SOLID	X	X	X	X	X		X	X		X		X
N5866	95% LIQUID	X	X	X	X	X			X	X	X@	X	X
	5% SOLID	X		X		X							
N5881	99.4% LIQUID	X		X	X		X	X	X		X		X
	0.6% SOLID	X		X									

IR: INFRARED SPECTROSCOPY CONSIDERED SEMI-QUANTITATIVE
CHN: CARBON, HYDROGEN & NITROGEN - COMBUSTION COLUMN SELECTIVE DIFFERENTIAL THERMAL CONDUCTIVITY
EDXRFS: ENERGY DISPERSIVE X-RAY FLUORESCENCE SPECTROSCOPY CONSIDERED SEMI-QUANTITATIVE
KARL-FISCHER: COULOMETRIC KARL-FISCHER TITRATION FOR WATER
ICAP: INDUCTIVELY COUPLED ARGON PLASMA OPTICAL EMISSION SPECTROSCOPY
IC: ION CHROMATOGRAPHY
GC-FID: GAS CHROMATOGRAPHY WITH FLAME IONIZATION DETECTOR
GC-ECD: GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTOR
GC-MS: GAS CHROMATOGRAPHY - MASS SPECTROSCOPY
@ THIS PHASE WAS ALSO EXTRACTED WITH WATER AND ANALYZED FOR ALCOHOLS AND KETONES BY GC-FID.